

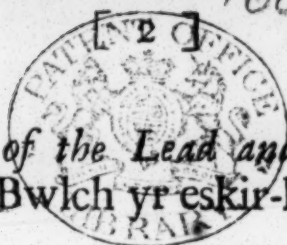
~~10784~~ 10743 $\frac{150}{c}$

. A
DESCRIPTION
OF THE
MINES
IN
CARDIGANSHIRE.

Ann. 273 D. 30



1607/5257



*A Description of the Lead and Silver Mines
of Bwlch yr eskir-hir.*

A THE West Level, and Line of Level.

B The Shaft at the great Work, where the Vein is Eleven Foot wide, but that in Ore never exceeded Seven Foot Six Inches.

C We are there sinking; but being much water'd, we are driving up the East Level Vein from (*d*) in Ore, that is above Four Foot wide; and in some Places it is above Eight Foot wide in firm solid Ore: This Drift is to free the Shaft at **C** from Water.--- At **D** we want above Fifty Yards to cross to the Vein **A**; and at **B** we want but Five Yards; those Two Veins divide at the Mountain **E**; and the great Vein runs by **F**.

G The East Level Vein is very rich, as you find it described at **D**: We raise and wash Ore there, and make it Merchandizable at 3 s. 7 d. per Tun.

H Is the Bog Work, where we have Ore a Yard wide, and a Drift from **I** will free it from Water: **K** The New Work is much wider, but the same Vein.

We have Three more Veins; but I have described none but where we have wrought, having much more in this Liberty, that will hereafter require a farther Description; this Boundary being above Thirty Seven Miles Compass: In which Liberty we have those Mountains included, on which the *Welsh* Prophecy is made, viz. *Yn Eskir-hir a Brin Melin*--- *Y Mae Cyfoeth trî Brenin*. Thus English'd; *In Eskir-hir and Brin Melin*---*Lies the Wealth of Three Kings*.

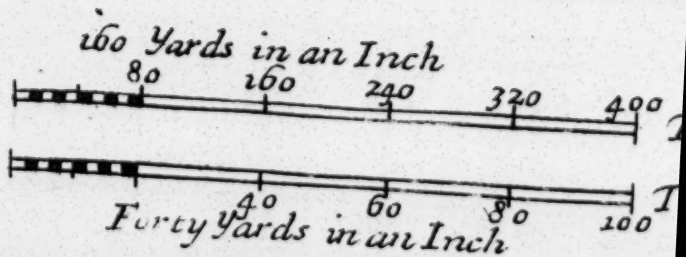
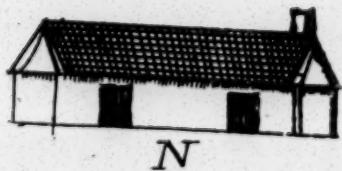
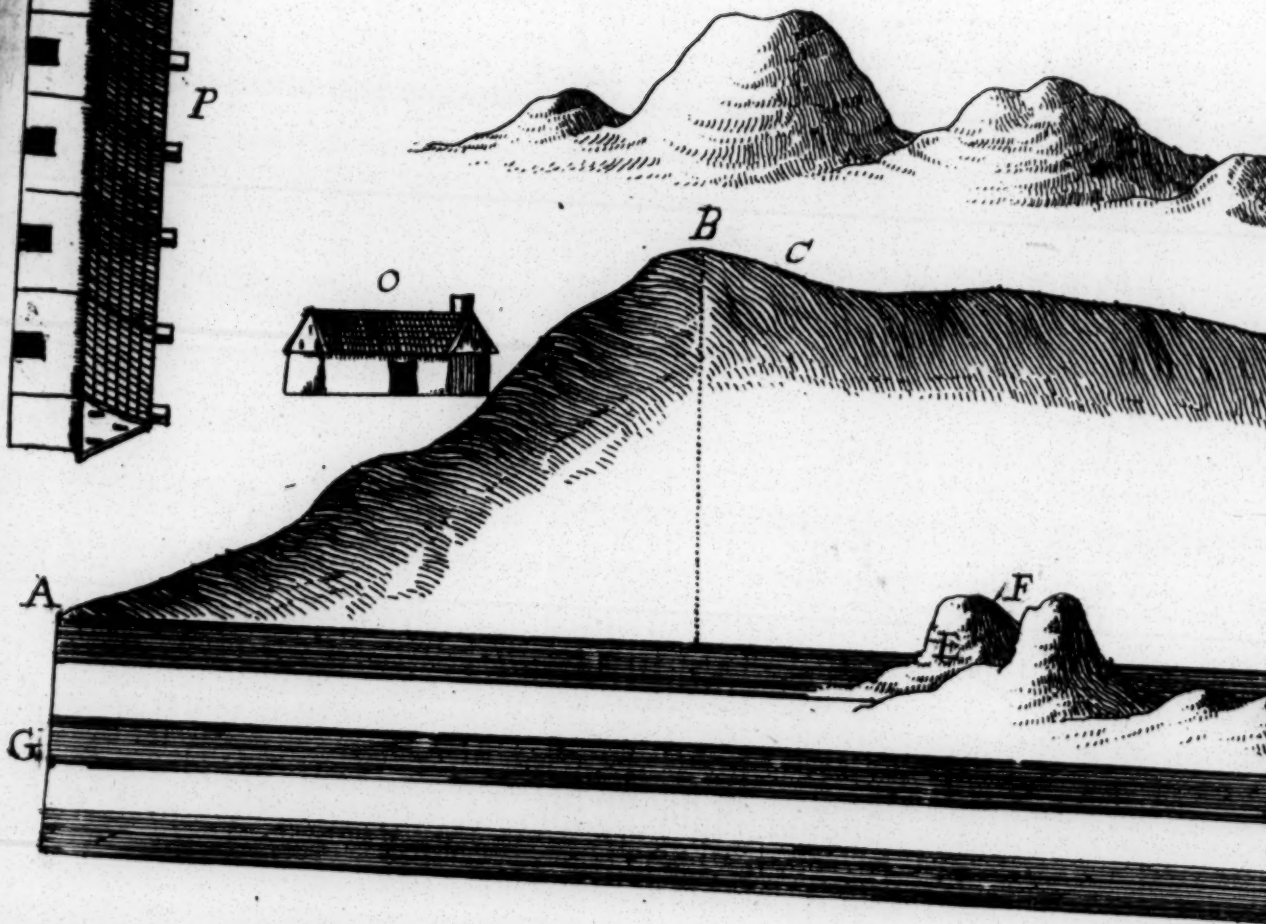
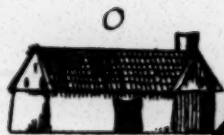
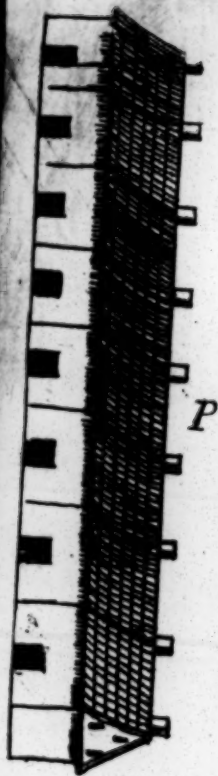
We shall set the other Part of this Liberty to work after the Mines that are here inserted in the following Maps are in full Management.

L Is the East Level; **M** Houses built for the Miners; **N** Two Store-Houses; **O** the Smiths Forge; and **P** is the New Town, called, *Welsh* Potoxi.



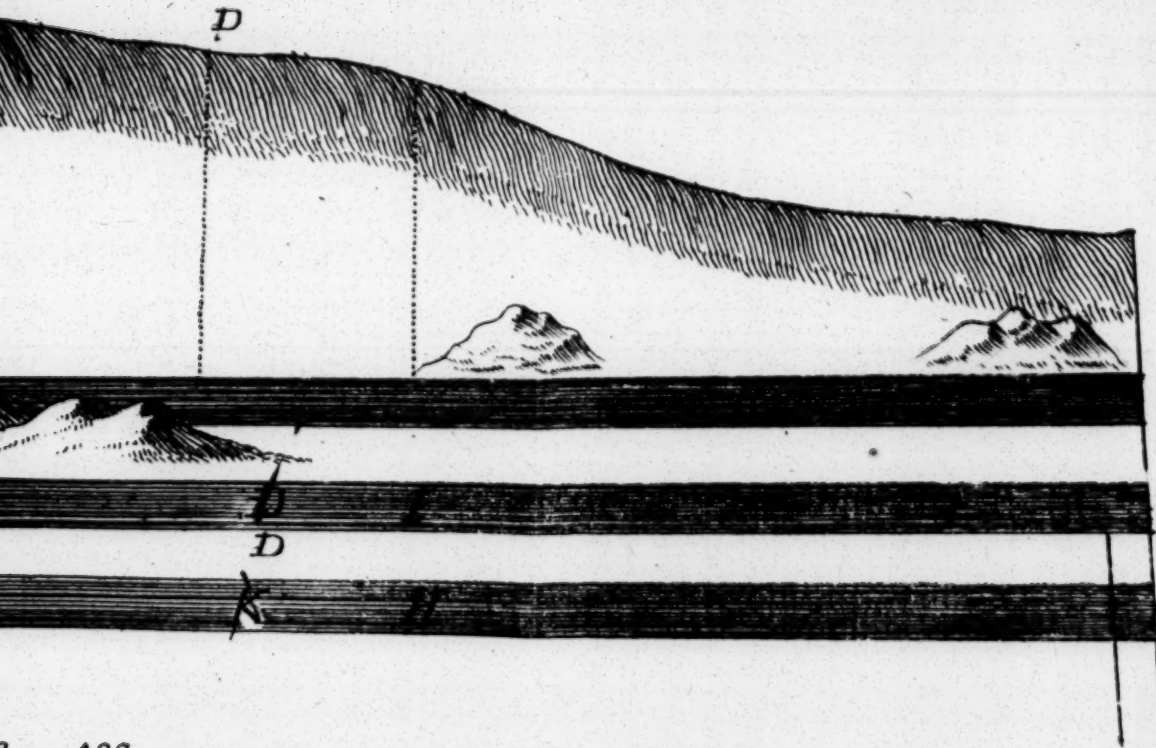
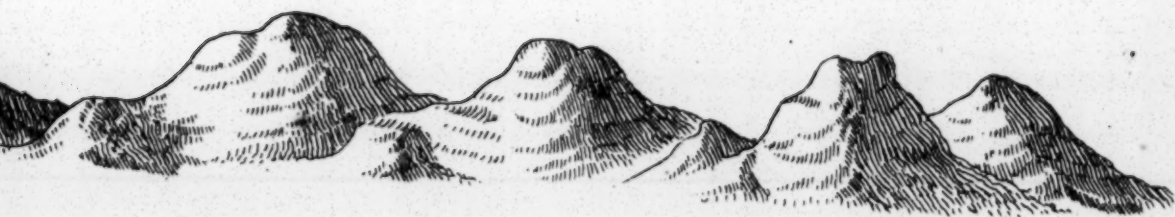


A Mapp of the Great Lead & Silver



ver Mines of Bwlch-yr-eskir-hir

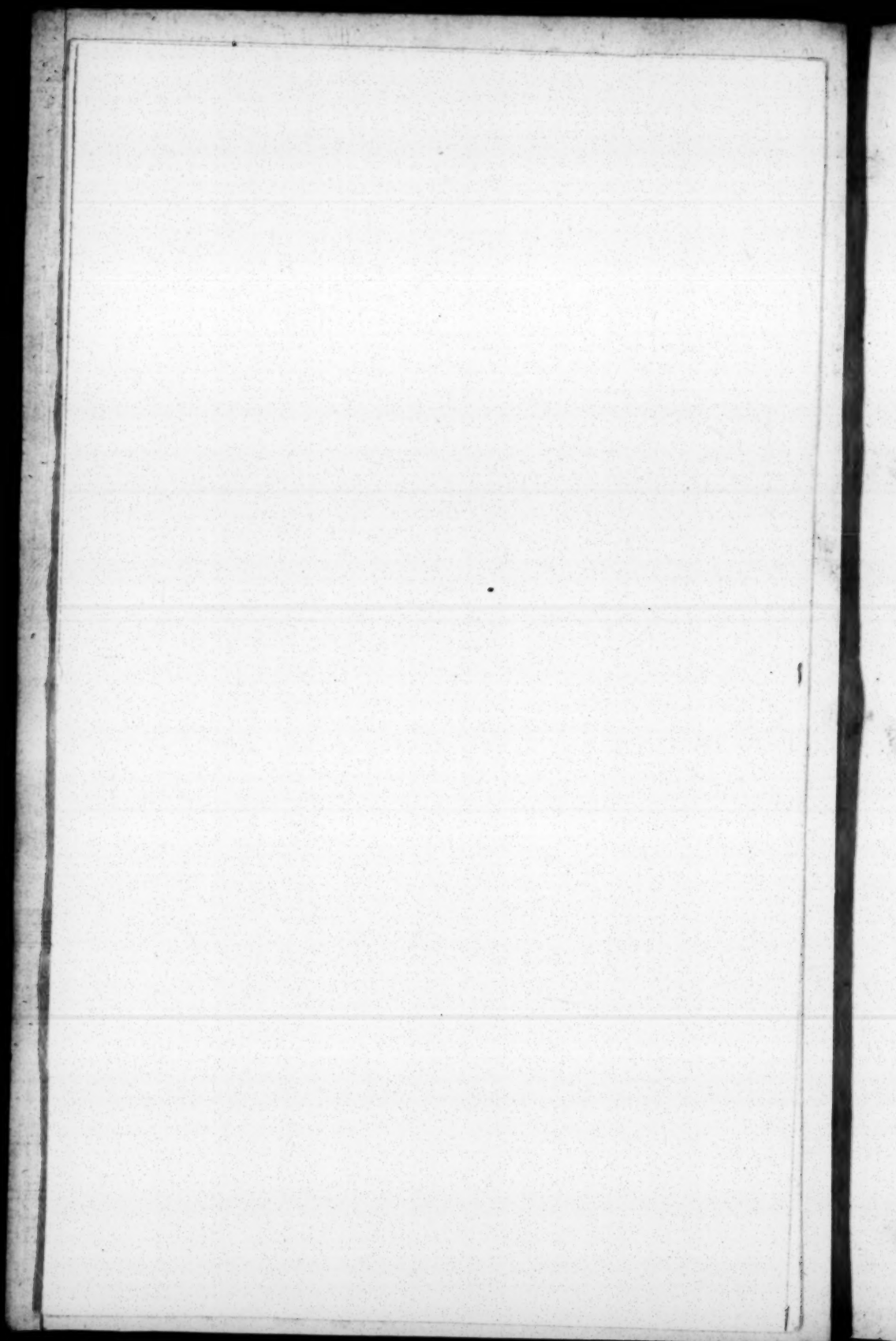
1.



400 This Scale measures y^e Length of y^e Leavel

100 This Scale measures y^e Hight of y^e Hill





*A Description of the Map of the Lead and Copper
Mines at Bwlch-kaninogg.*

A IS the lowest Part of the Ground.

B Is where we begin our Level, which will be Eighty Eight Yards deep.

C Is the Place where our Stoups begin to be wrought in Ore, which in some Places was Two Foot, in others One Yard; but now at **D** is Five Foot wide in Ore, and seems to widen downward: Here we have raised some Hundreds of Tuns of Pot-
ters Ore: Likewise we have a Copper Vein at the Side of this Eighteen Inches wide, which by an Essay thereof, holds One in Five in Fine Copper.

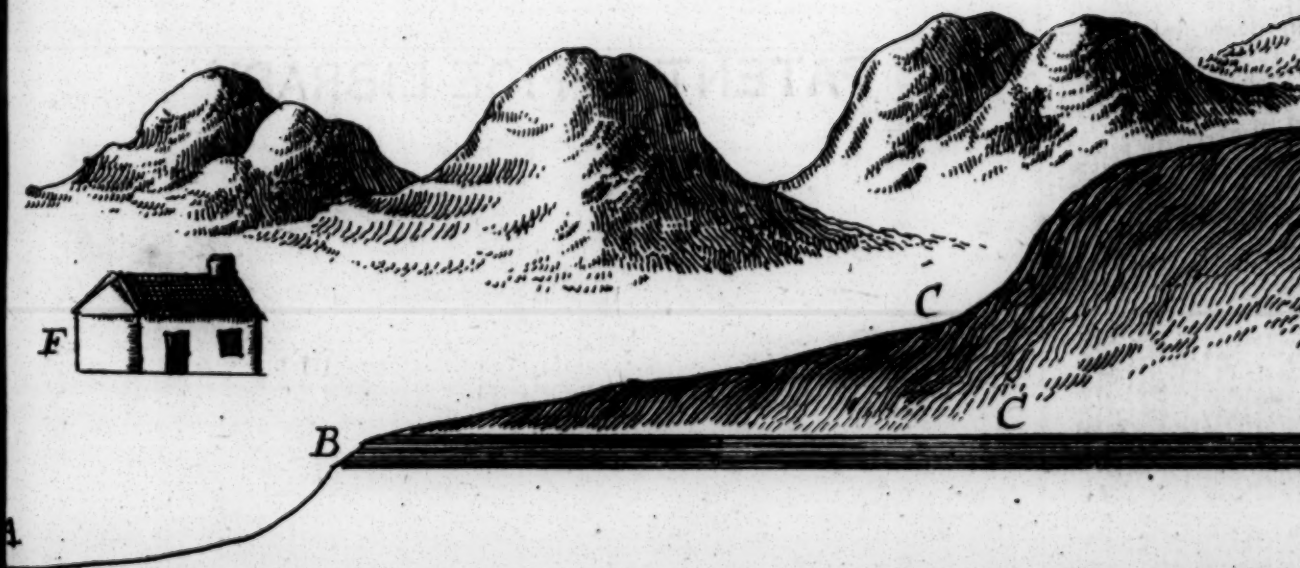
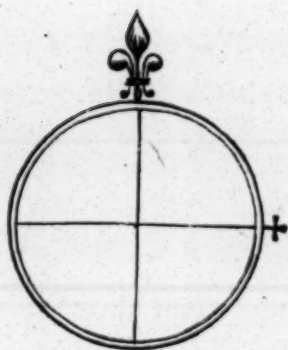
E Is the Top of the Hill where the Level-Strake begins, which continues near a Mile in Length.

A Another Vein Twenty Yards from this, which is above Four Foot wide, between firm and solid Sides; tho' we have raised some Tuns of Ore from it, yet we shall not drive the Level to it, till we be on the Rise of the Mountain at **C**, and then this Level will serve both those Veins.

Note, We may gain above Forty Yards more Level, beginning at **A**, the Line of that Level.

F The Smiths Forge.

A Mapp of y^e New Mines of Lead & C

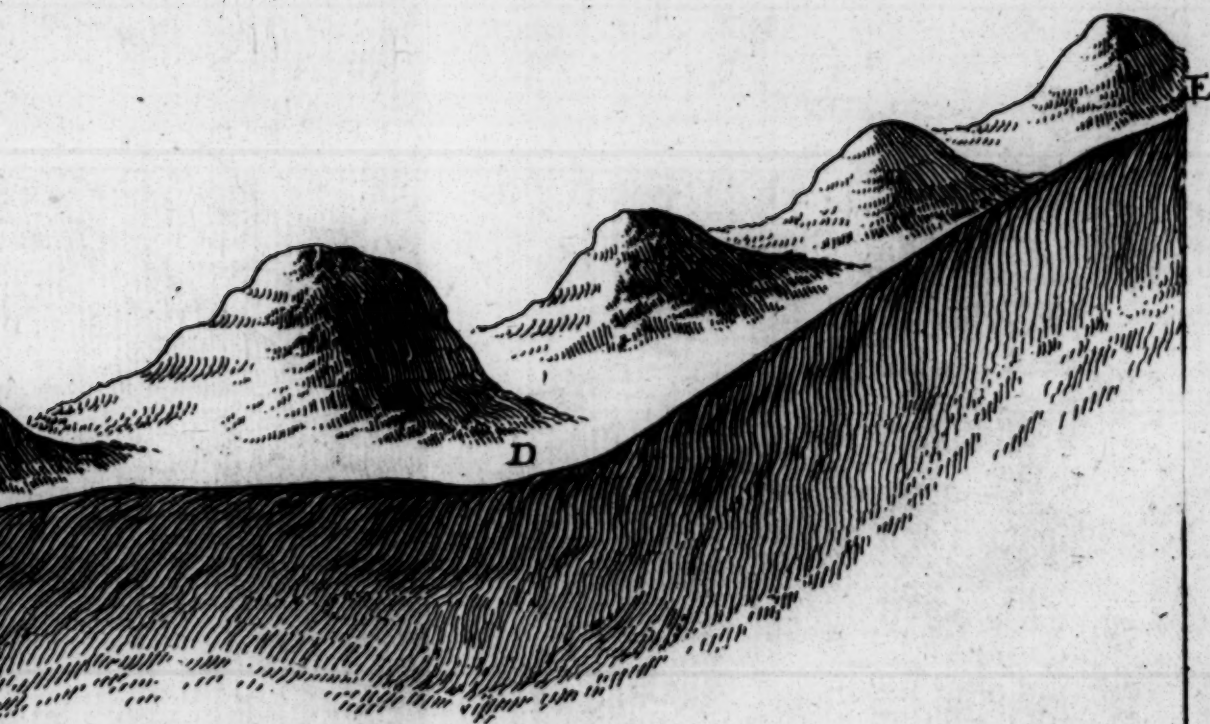


A Scale of Yards 40 in an Inch



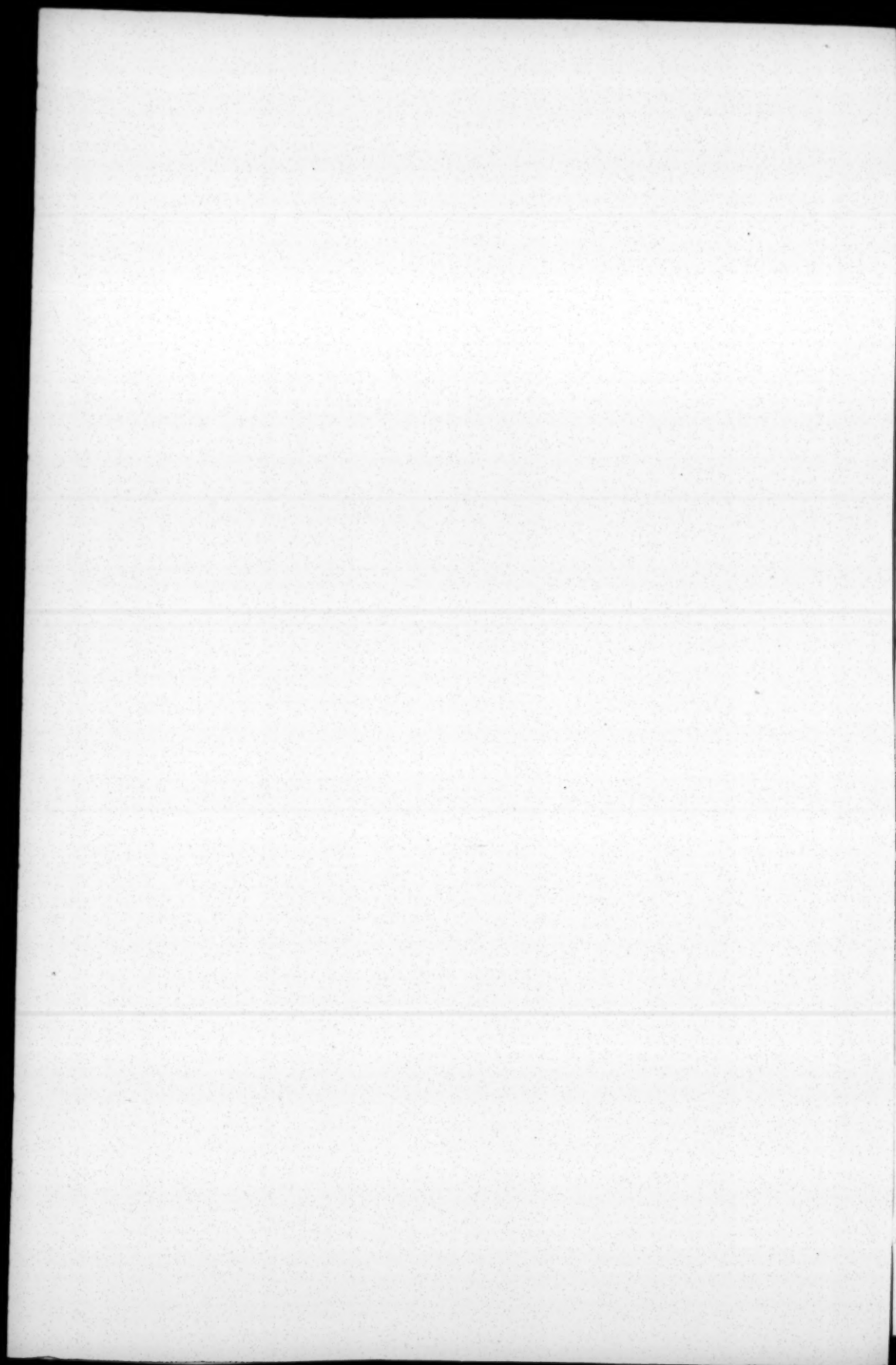
& Copp: ore at Bwlch Kaninog

2.



D





Amphibolite

The amphibolite is a dark, fine-grained rock, composed of hornblende and plagioclase. It is typically found in the upper part of the sequence, where it is associated with the gabbro. The hornblende is a dark, elongated mineral, while the plagioclase is a lighter, more equiaxed mineral. The two minerals are interlocked, forming a characteristic texture. The amphibolite is often found in thin, elongated bodies, which may be oriented in different directions. This suggests that the rock may have been subjected to some degree of deformation. The amphibolite is a common rock type in many igneous complexes, and its presence is often used as a diagnostic feature. In this case, the amphibolite is found in the upper part of the sequence, where it is associated with the gabbro. This suggests that the amphibolite may have formed at a higher temperature than the gabbro. The amphibolite is a dark, fine-grained rock, composed of hornblende and plagioclase. It is typically found in the upper part of the sequence, where it is associated with the gabbro. The hornblende is a dark, elongated mineral, while the plagioclase is a lighter, more equiaxed mineral. The two minerals are interlocked, forming a characteristic texture. The amphibolite is often found in thin, elongated bodies, which may be oriented in different directions. This suggests that the rock may have been subjected to some degree of deformation. The amphibolite is a common rock type in many igneous complexes, and its presence is often used as a diagnostic feature. In this case, the amphibolite is found in the upper part of the sequence, where it is associated with the gabbro. This suggests that the amphibolite may have formed at a higher temperature than the gabbro.

[6]

*A Description of the Lead and Silver Mines
of Cwmsfumblock.*

A THE Beginning of the upper Level.

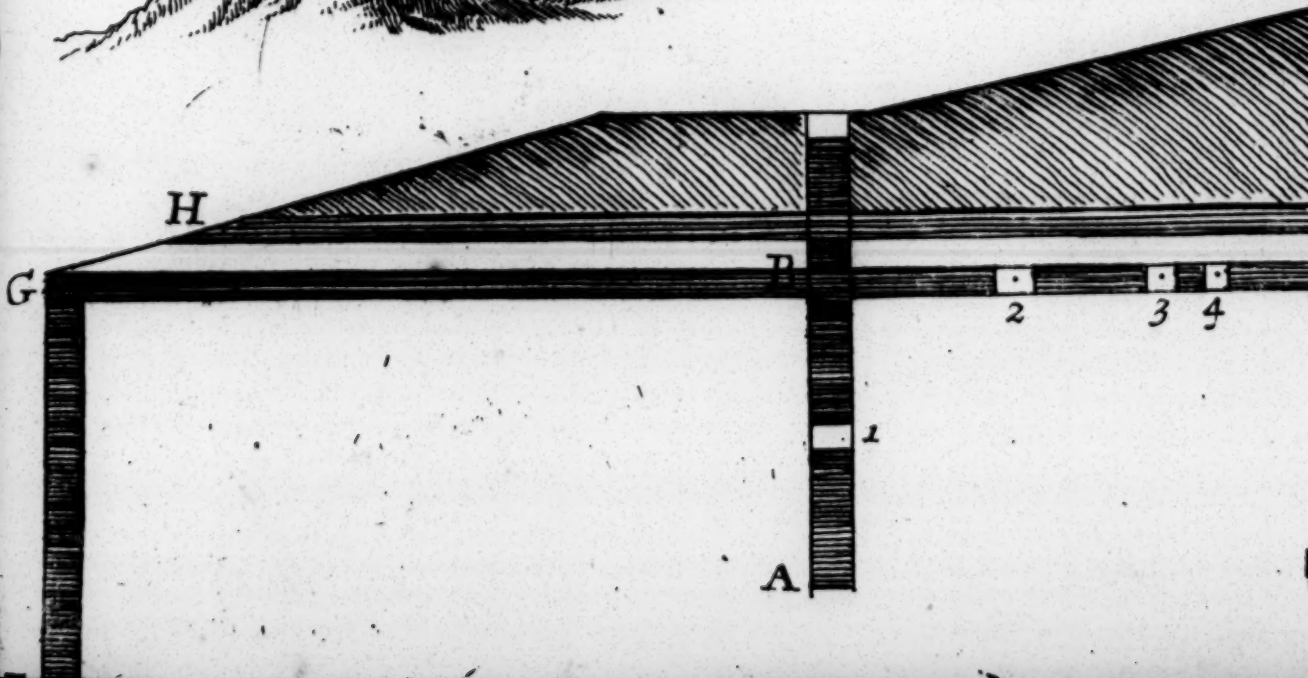
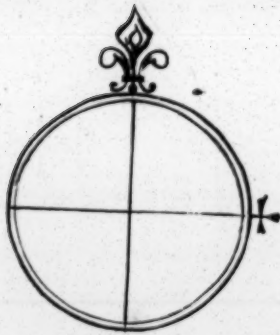
B The Place where that Level cuts into the Vein G. *Note*, The lower Line at G is the Line of Level. We have driven this Level to the Figure 5, where we are sinking a Shaft; and we raise Ore at the 4th Shaft from a Rib Two Foot wide; I doubt not when we come to our firm Strake of Ground at C, being Thirty Three Yards yet to drive, (which is all a continued Bog to D, and that Strake holds above One Mile in Length) but that we shall find our Veins as rich in Ore, as we found the Bogs at *Eskir-bir* and *Caninogg*. *Note*, This Level is Sixty Four Yards deep.

But the Level from F to G will come up in Ore under all those Soals or Bottoms, Fifty Two Yards deep, which makes the whole Level at C to be 116 Yards deep.

H Is the North Vein which runs about Five Yards distant from the Vein G; but does not run so exactly parallel, but that sometimes they meet in One for Twenty Yards, and then will part again: Where they meet, they are very rich, being each above a Yard wide. **I** is the Smiths Forge. *Note*, That a Tun of Mettal of this Ore yields Sixty Five Ounces in fine Silver.

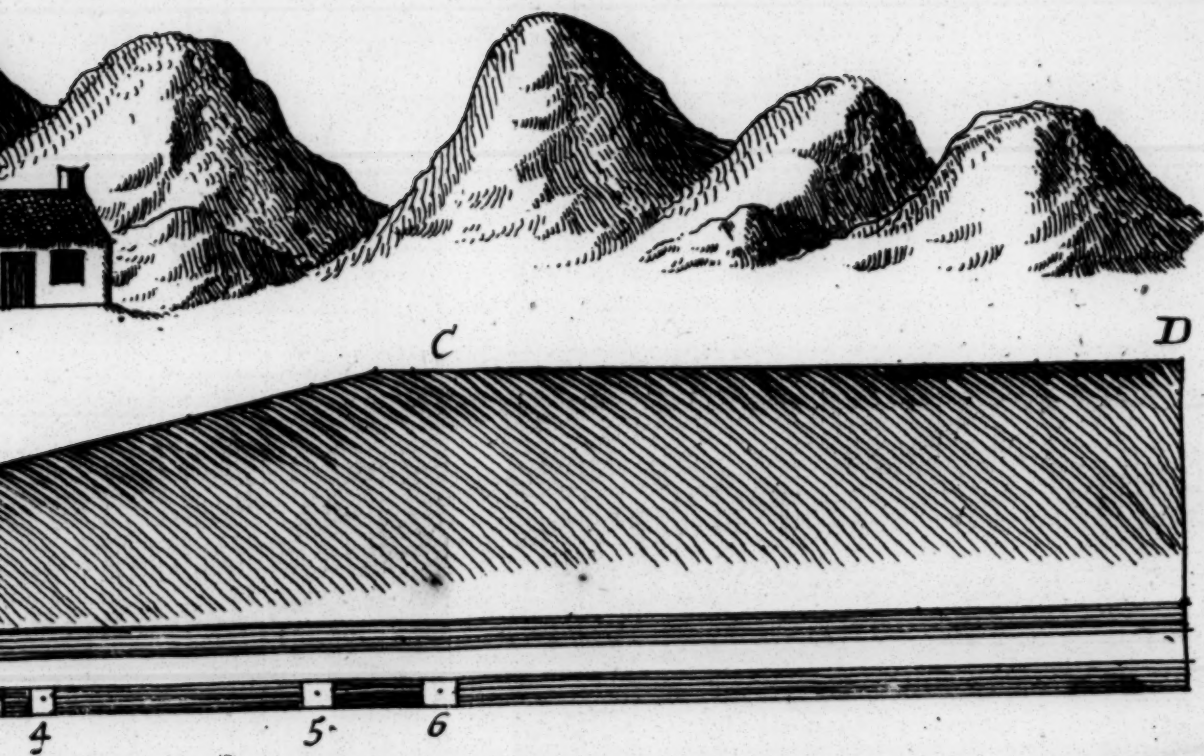
The Ingenious Sir *Hugh Middleton* took a Lease of this Mine of the Patentees of *Royal Mines* at 400 *l.* a Year Rent; and by Extracting the Silver out of the Lead, clear'd 24000 *l.* a Year from them, as appears by his Books of Accounts; and Mr. *Busbell* being flush'd with this Success, cut a measured Mile to find this Vein, to Three and Four Yards deepness, at no small Charge: And being Sir *Hugh* by an Engine had wrought it several Yards under Water, the Patentees endeavour'd to bring up an Addit, to go under this Work, at the Expence of 11000 *l.* as Sir *Edmond Wallcop*, and others of the Patentees, then of that Committee, can inform you, but they struck much short of reaching his Bottoms: And tho' that Vein hath been attempted by many, yet it never was recover'd till now, since Sir *Hugh Middleton's* Death.

A Mapp of the Lead & Silver Mine.

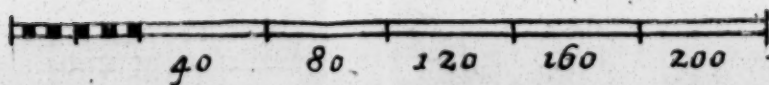


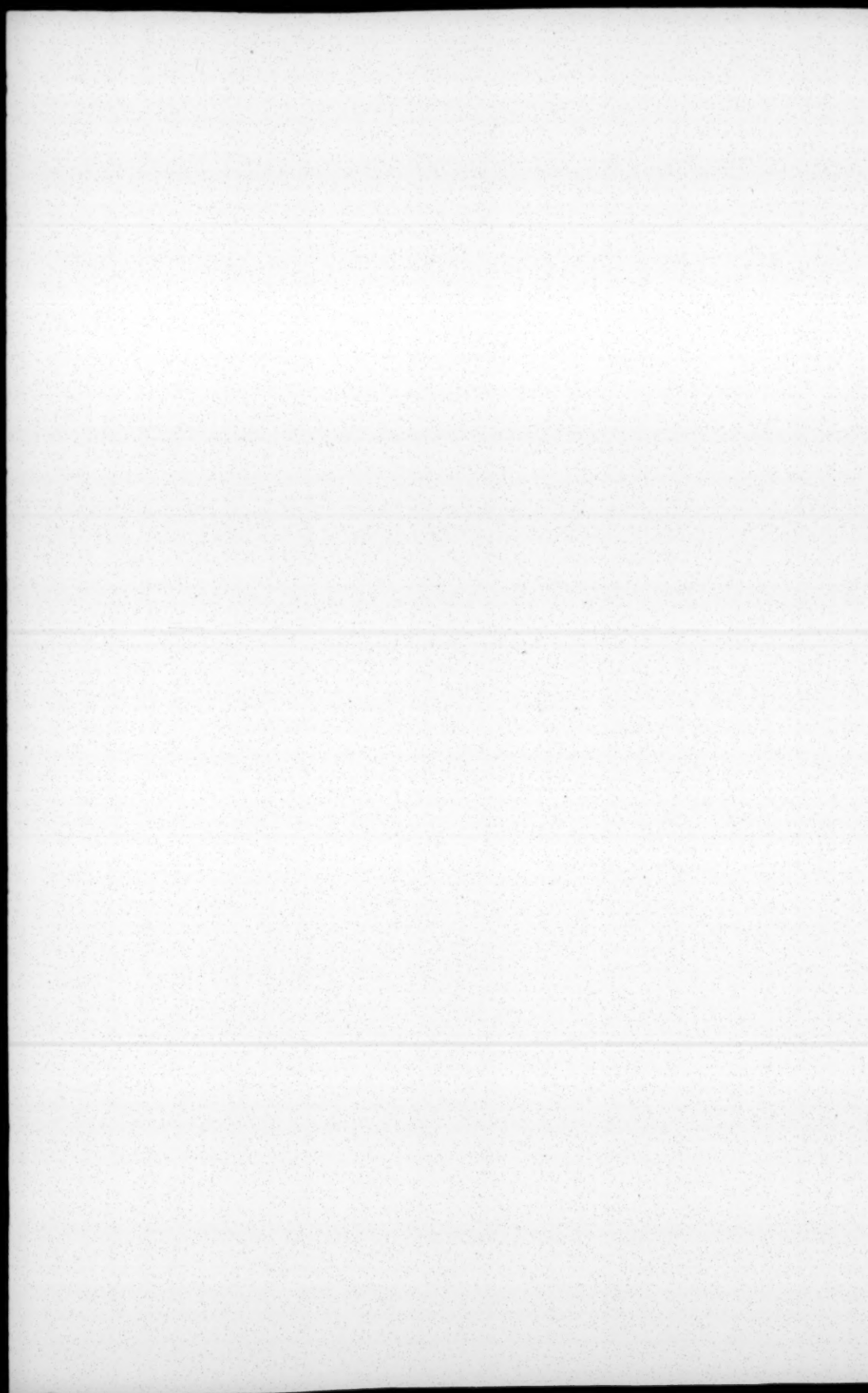
Mines of Cumsumilock

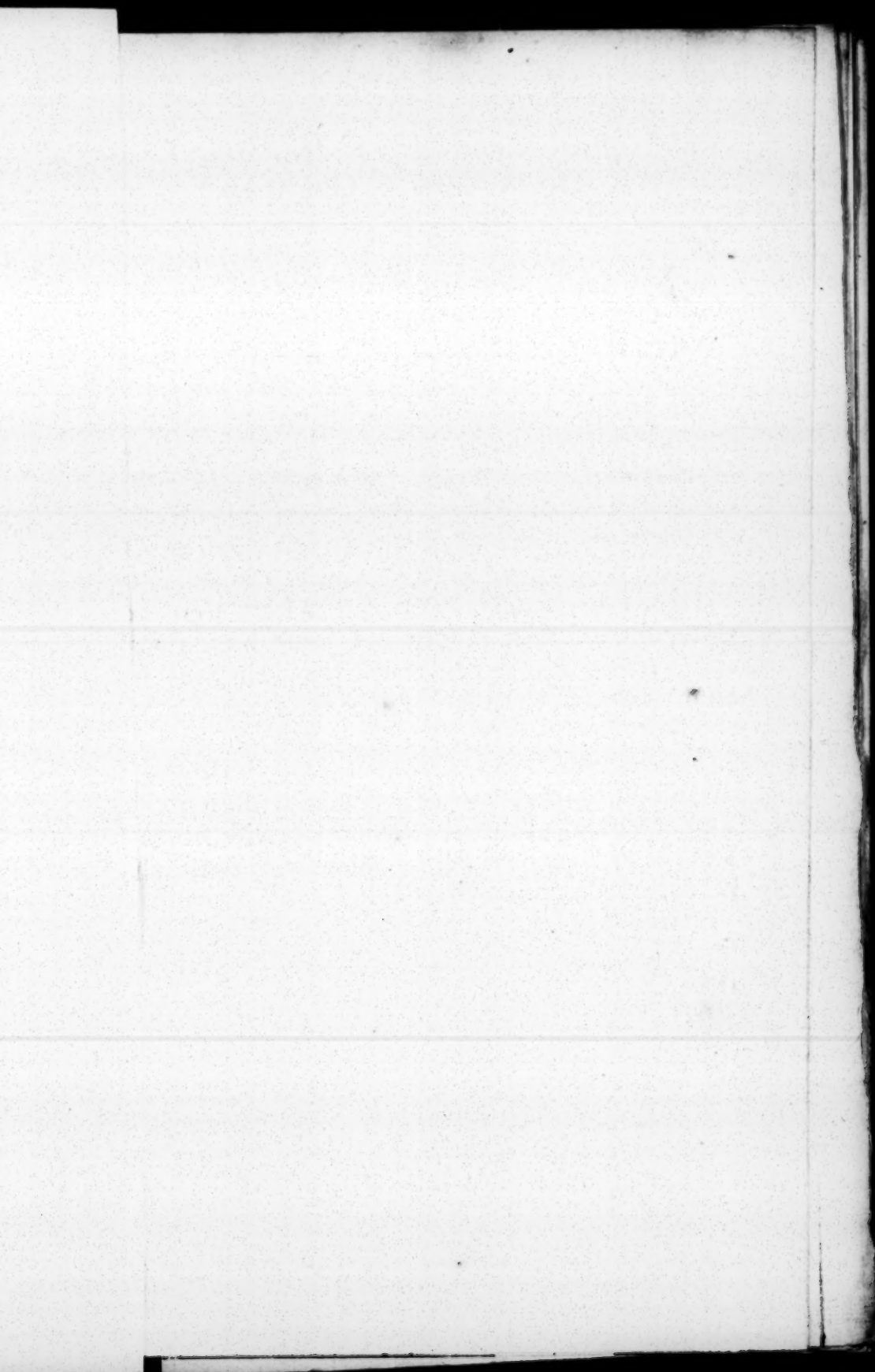
3.



A Scale of Yards 80 in an Inch







*A Description of the Map of the Great Lead and
Silver Mines of Goginian.*

A **T**HE Line of Level, or the Beginning of the Addit.

B The *Old Man's Fore-field*, which is a main Twitch from the Top to the Old Addit; here they have lost above Sixty Yards of Level.

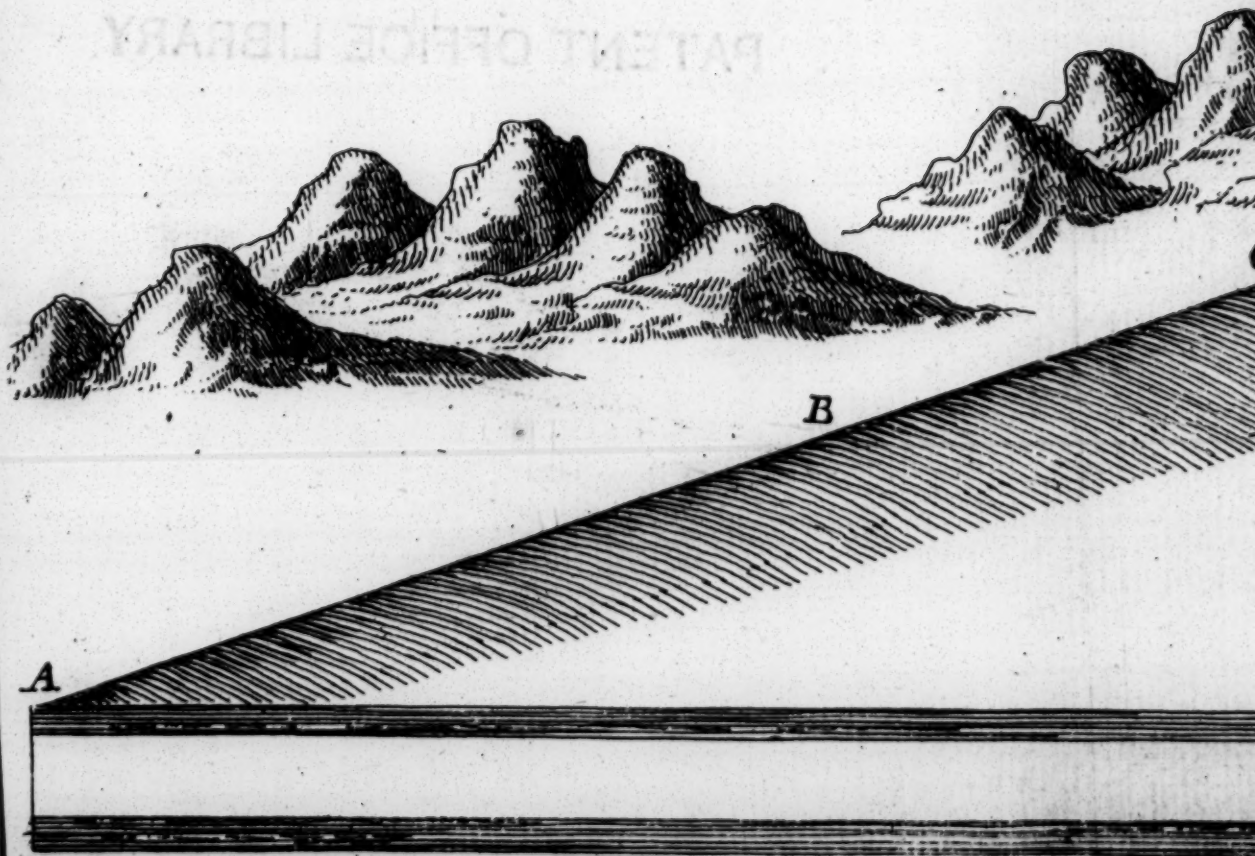
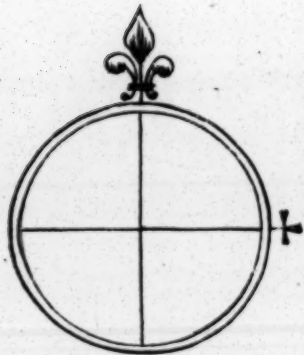
At *D* this Level will be a Hundred Yards deep, and we shall be Sixty Yards under the Old Work. Mr. *Bushell* kept a Mint at work at the Silver Mills in *Cardiganshire*, from the Bullion he had from this Mine; and is said to cloath King *Charles* the First's whole Army from part of his Profit in this Work.

Here is a soft Clay Vein, and a hard Vein goes in Company of each other, and sometimes they meet and cross; and when the Clay Vein was on the South Side, both were richer than when it was on the North.

I have dressed up an old Level which was never driven into that Work, which will go some few Yards under part of it; and it likewise serves for a Level to another Vein, call'd *Brinpicka*, which is hereafter described by it self.

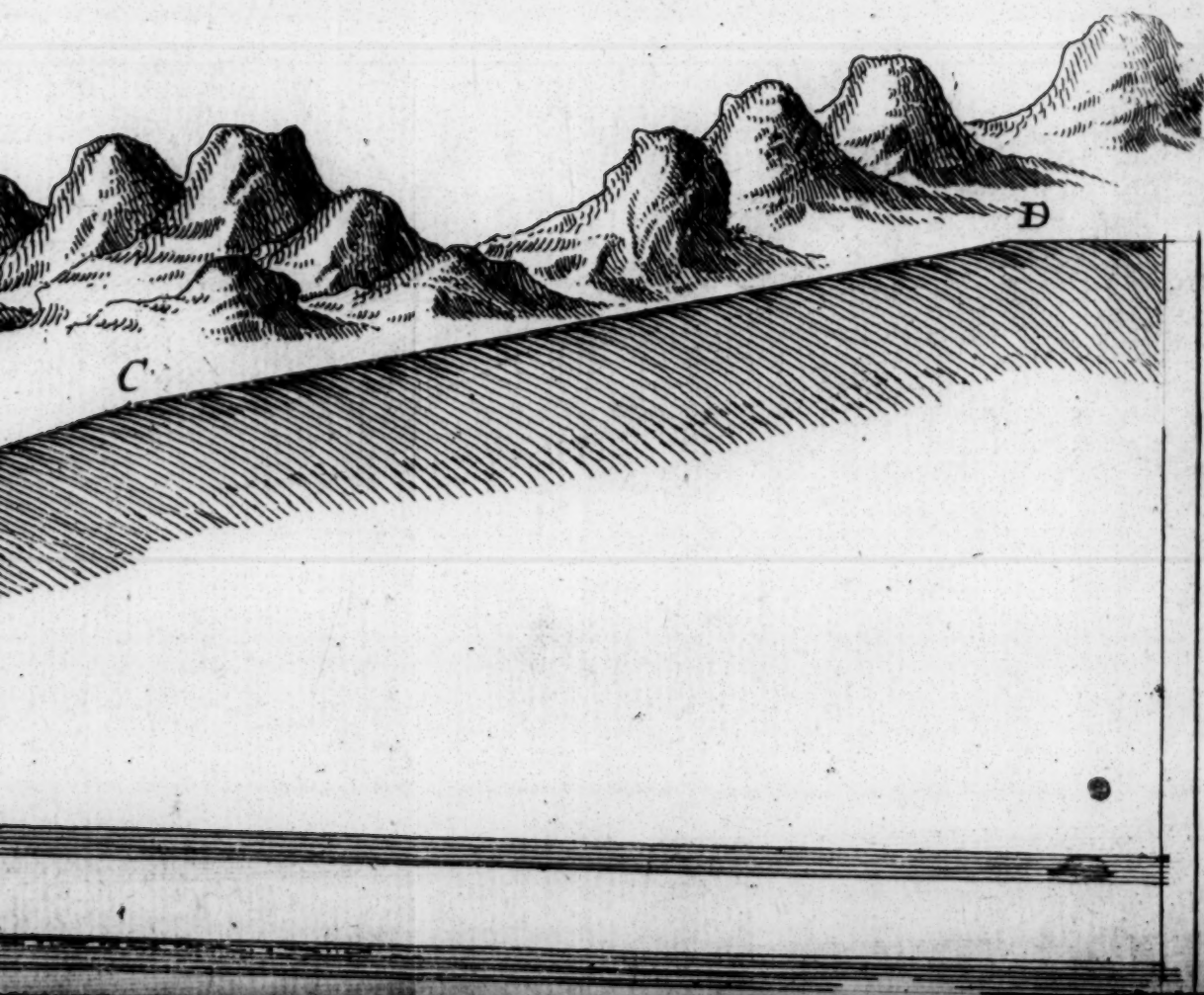
Note, These Veins holds Forty Four Ounces of fine Silver *per Tun* in every Tun of Mettal made of that Ore.

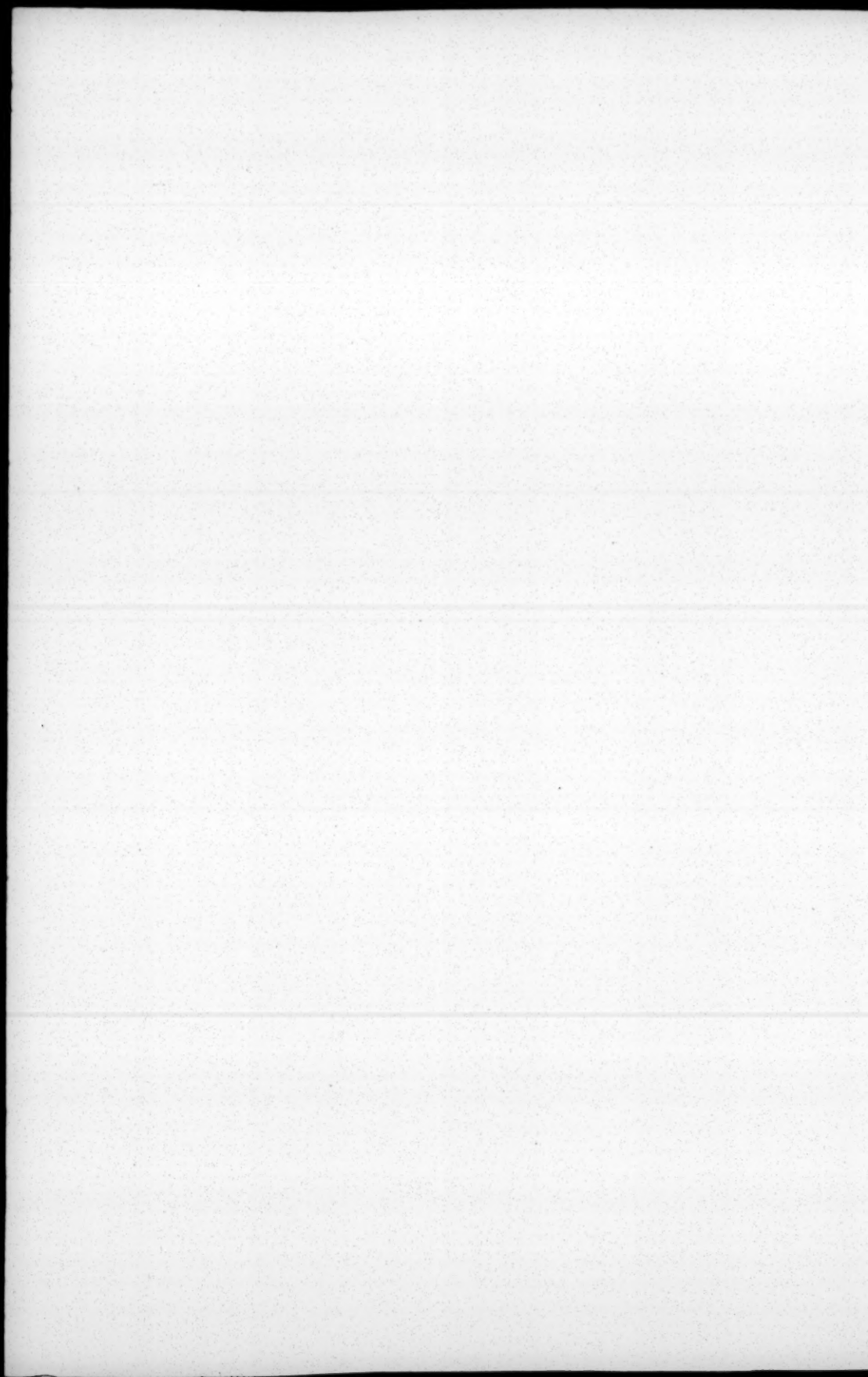
A Mapp of the Great Lead & Silver



Silver Mines of Goginian

4.





1871

1872

1873

1874

1875

1876

1877

1878

1879

1880

1881

1882

1883

1884

*A Description of the Map of the Lead and Silver
Mines of Brinpica.*

A IS the Line of Level or Addit.

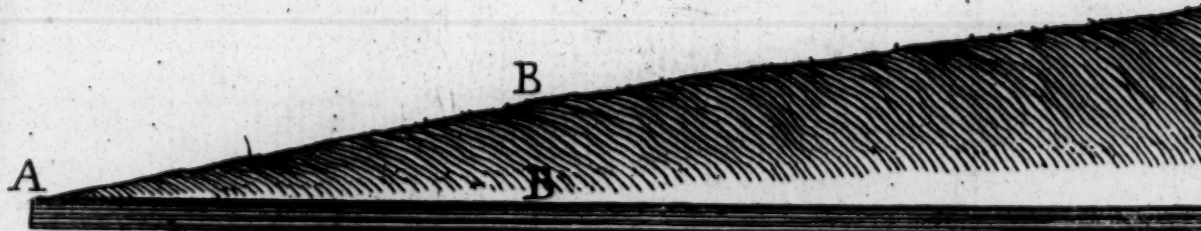
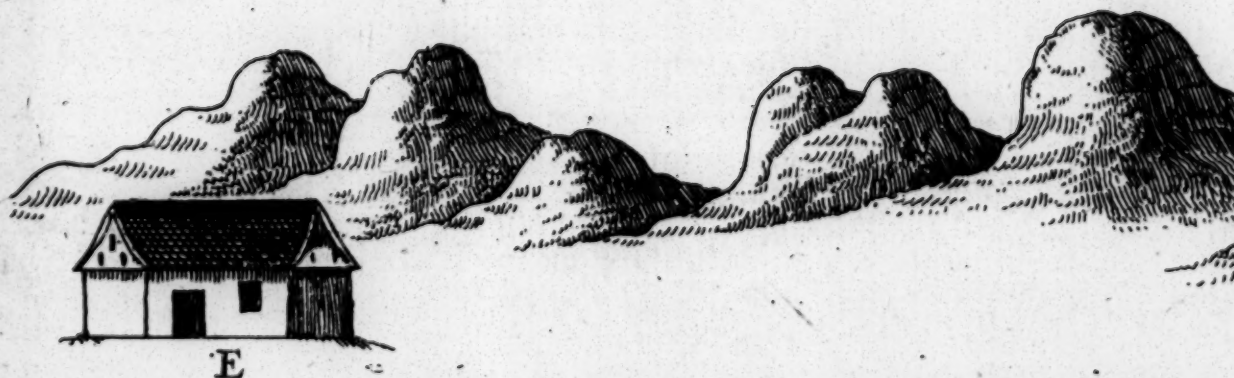
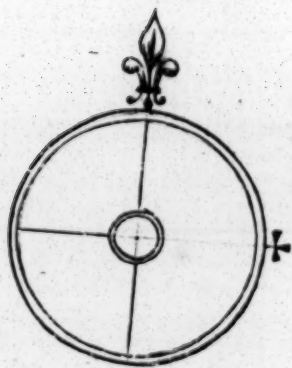
B Is where we now are driving, being a soft Clay Vein, mixed with small Ore.

C Is a Shaft sunk by the Patentees of Royal Mines, in which is a firm Rib of Ore Eighteen Inches wide at Eighteen Yards deep.

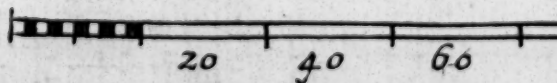
Note, That we shall come under their Soals Thirty Yards at **C**, and at **D** this Addit will be Seventy Yards deep: And this Ore holds Forty Four Ounces in fine Silver upon every Tun of Mettal made from that Ore.

E The Smiths Forge for this Work and *Goginian*.

A Mapp of the Lead & Silver Mines

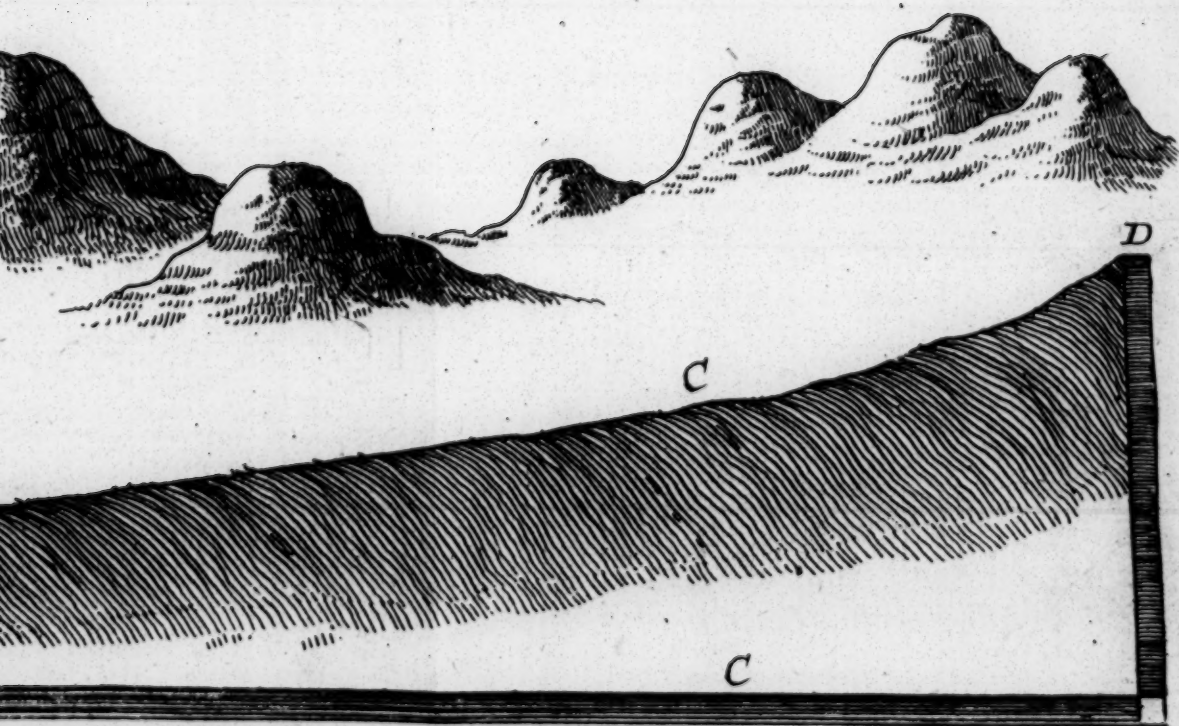


A Scale of Yards 40 in



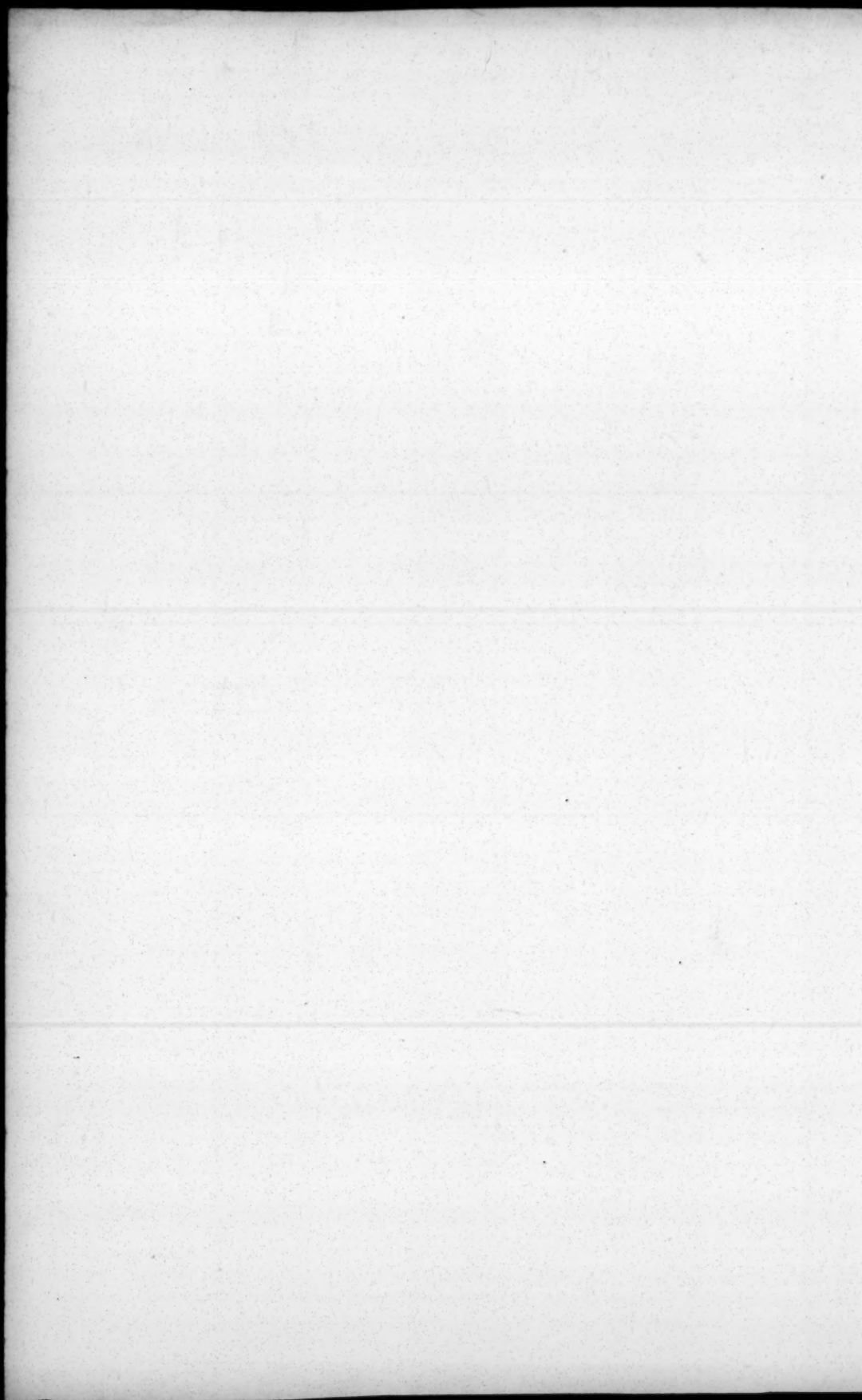
Mines of Brinpicka.

5.



40 in an Inch

60 80 100



A Map of the Land and Silver Mines of
Cwmavavin.

THE Beginning of the Adair.

- B. The Place where it cuts into the Vein
Eighteen Yards deep.
- C. The Place where we are driving to it
Well at Fifty Four Yards deep; where a
Vein is a Yard wide; but the clear part
One is but about Four inches wide; the re-
is mixed with Ore.
- D. Is the Place where we intend to drive
to the Vein, which is one of the best
Veins, and holds Forty Four Ounces of
Silver per Tun, in every Tun of Metal made
of that Ore.

*A Map of the Lead and Silver Mines of
Cwmarvin.*

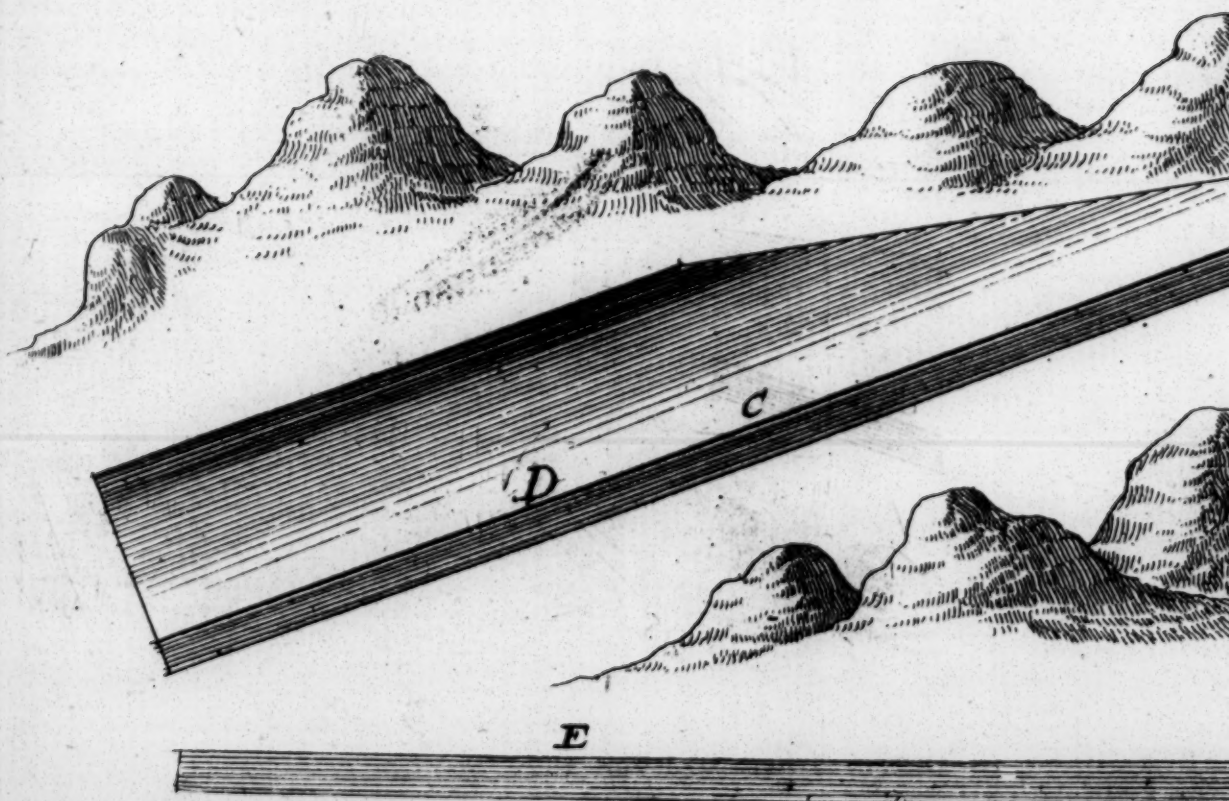
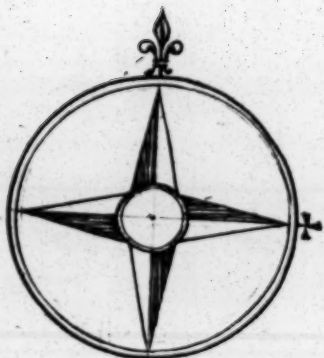
A THE Beginning of the Addit.

B The Place where it cuts into the Vein at Eighteen Yards deep.

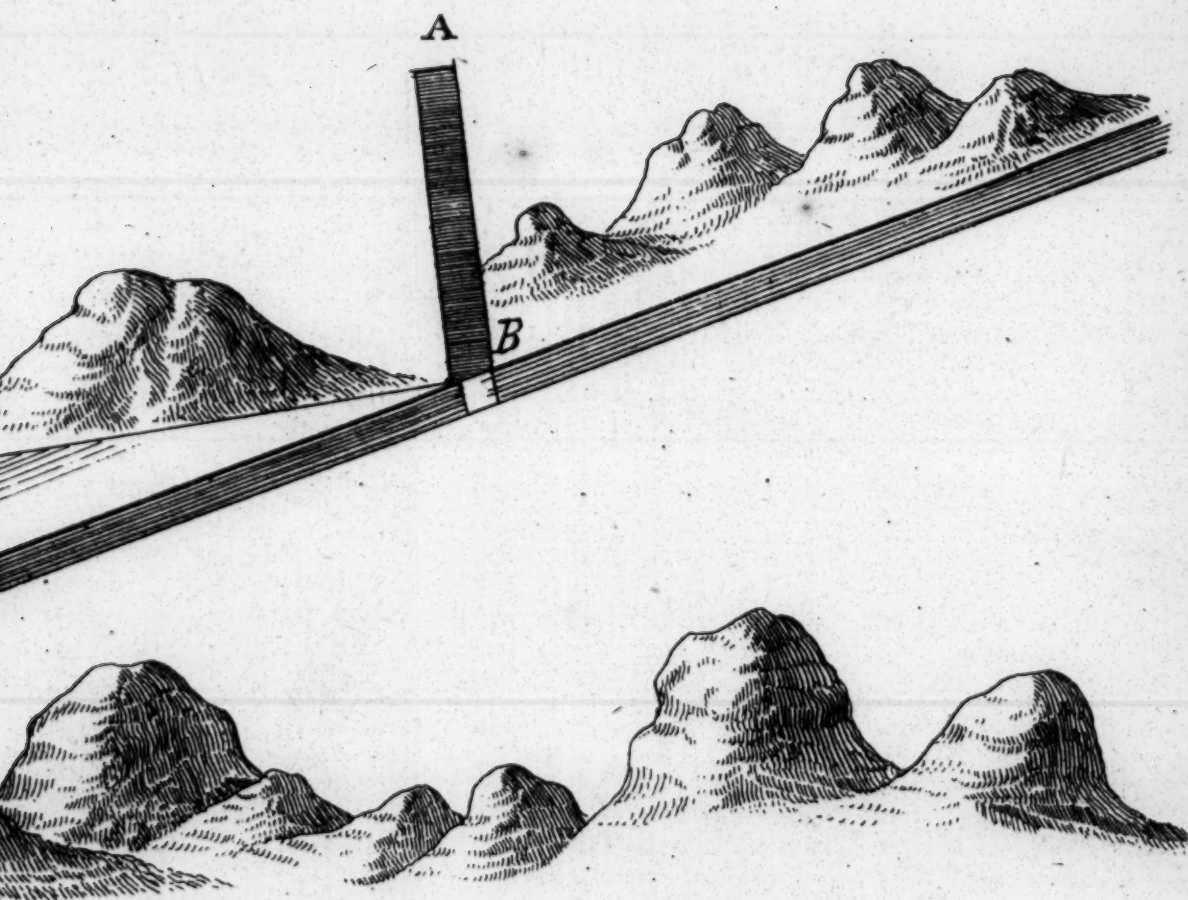
C The Place where we are driving to the West at Fifty Four Yards deep, where our Vein is a Yard wide; but the clean Rib of Ore is but about Four Inches wide; the rest is mixed with Ore.

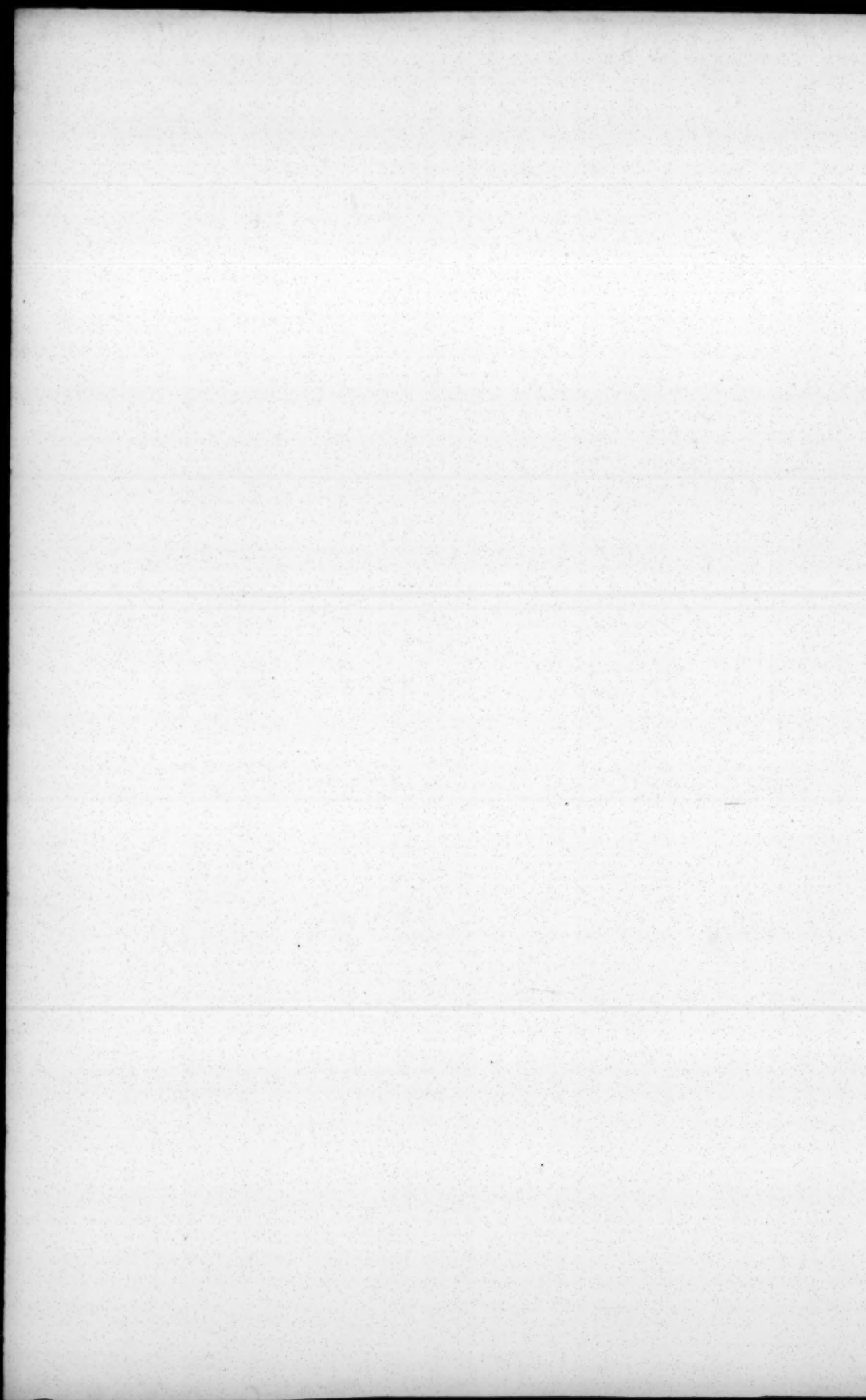
D Is the Place where we intend to cross to the Vein *E*, which is one of the *Goginian* Veins, and holds Forty Four Ounces of fine Silver *per* Tun, in every Tun of Mettal made of that Ore.

A Mapp of y^e Lead & Silver Mines of



A Scale of Yards 40 in





A Definition of a Vein, and the
 Names of the same.

THE Line of Level, or the Beginning
 of the Vein.

B The Place where the Vein begins,
 and the Place where it ends, and the
 Place where it is found.

C The Place where the Vein begins,
 and the Place where it ends, and the
 Place where it is found.

D The Place where the Vein begins,
 and the Place where it ends, and the
 Place where it is found.

E The Place where the Vein begins,
 and the Place where it ends, and the
 Place where it is found.

F The Place where the Vein begins,
 and the Place where it ends, and the
 Place where it is found.

G The Place where the Vein begins,
 and the Place where it ends, and the
 Place where it is found.

H The Place where the Vein begins,
 and the Place where it ends, and the
 Place where it is found.

I The Place where the Vein begins,
 and the Place where it ends, and the
 Place where it is found.

K The Place where the Vein begins,
 and the Place where it ends, and the
 Place where it is found.

L The Place where the Vein begins,
 and the Place where it ends, and the
 Place where it is found.

A Description of a Map of the Lead and Silver Mines in Pencraig-ddy.

A THE Line of Level, or the Beginning of that Addit.

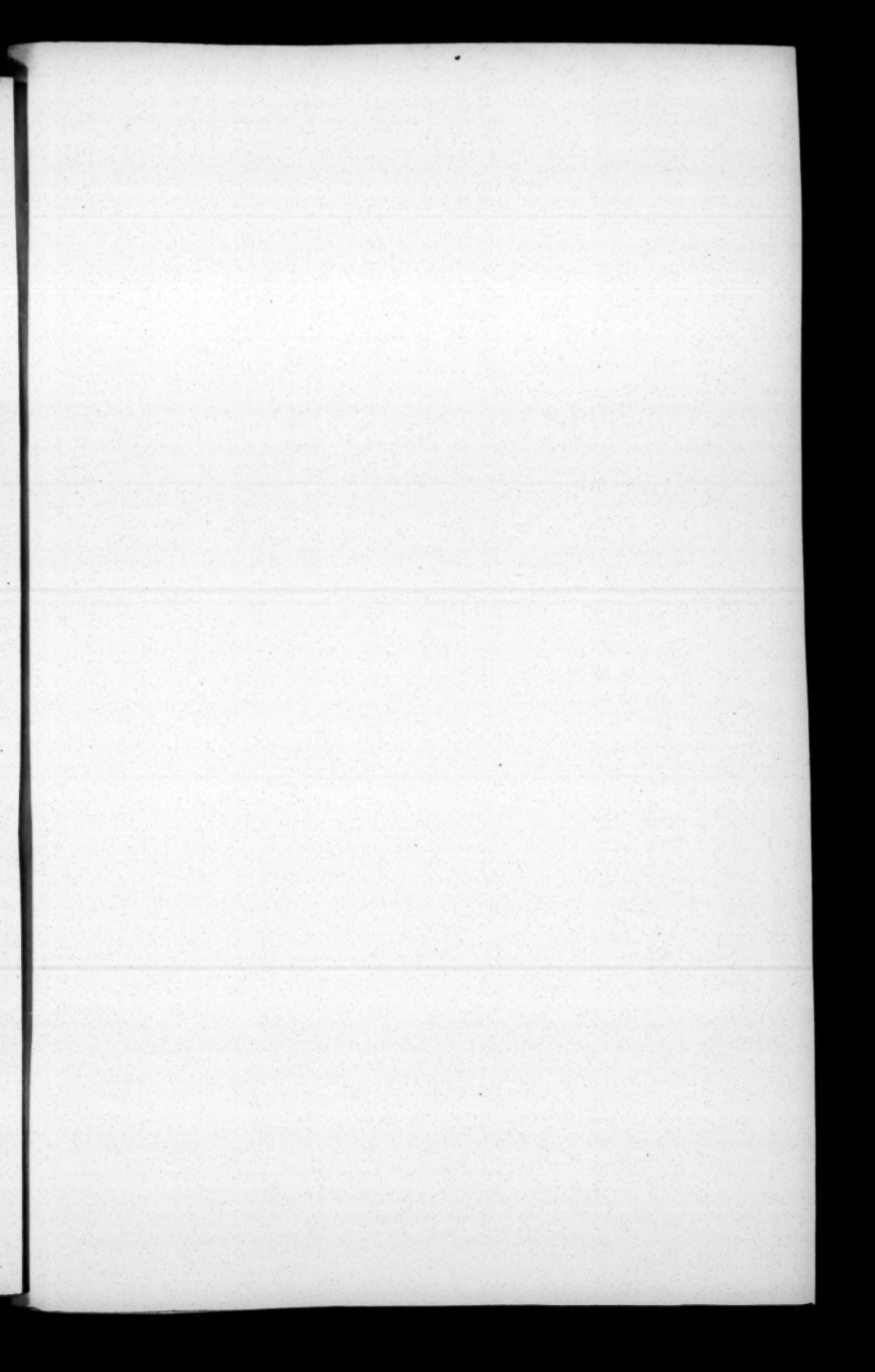
B The Place we now are driving; and Twenty Yards further we shall come to a fresh Forehead, or Forefield, Four Foot wide: It is now Ten Inches in Ore.

C The Place where the Strake of Ground begins, where we shall be Sixty Four Yards deep, and within Thirty Yards of another Vein.

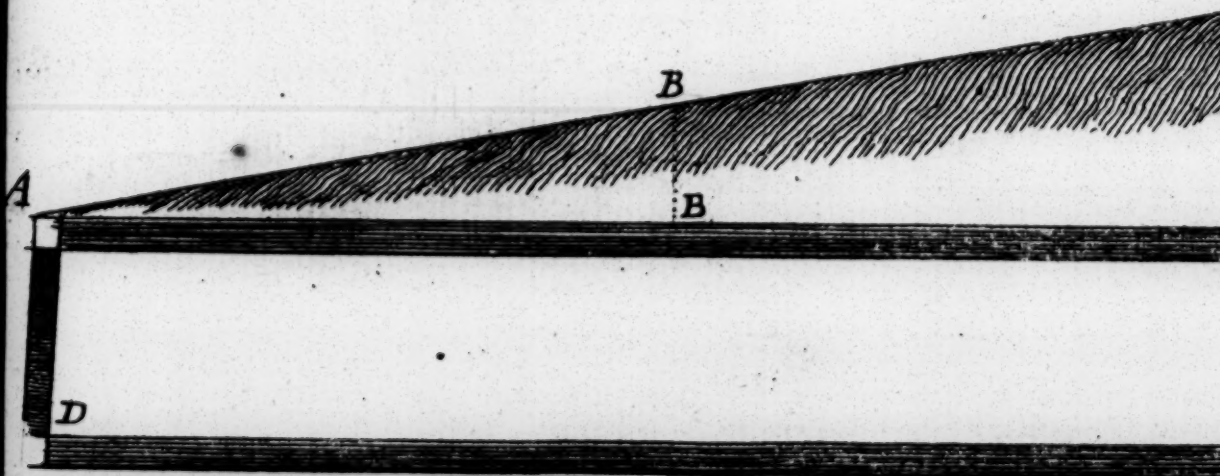
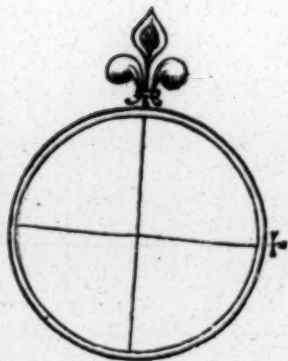
D The North Vein, which is all Measures from a Yard to Five Foot wide, in which we sunk Fourteen Yards deep, and it has a small Level to that Deepness; but that reach'd but Two Yards into the Crop of the Vein, which is mixed with Ore and Vein-Stone all the Breadth, and with clean Ribs of Ore in several Places Nine Inches wide.

Note, The Level from **A** will be Fifty Yards deeper, and with crossing Thirty Yards, will likewise be a Level to the Vein **D**; and these Two Veins have a Strake through a Morass from **C** for above Six Hundred Yards in Length; and these Two Veins, no doubt, will raise Ore very plentifully in that Ground.

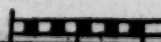
Note, That One Tun of Mettal made from this Ore yields Forty Four Ounces of fine Silver in each Tun.



A Mapp of the Lead & Silver Mines

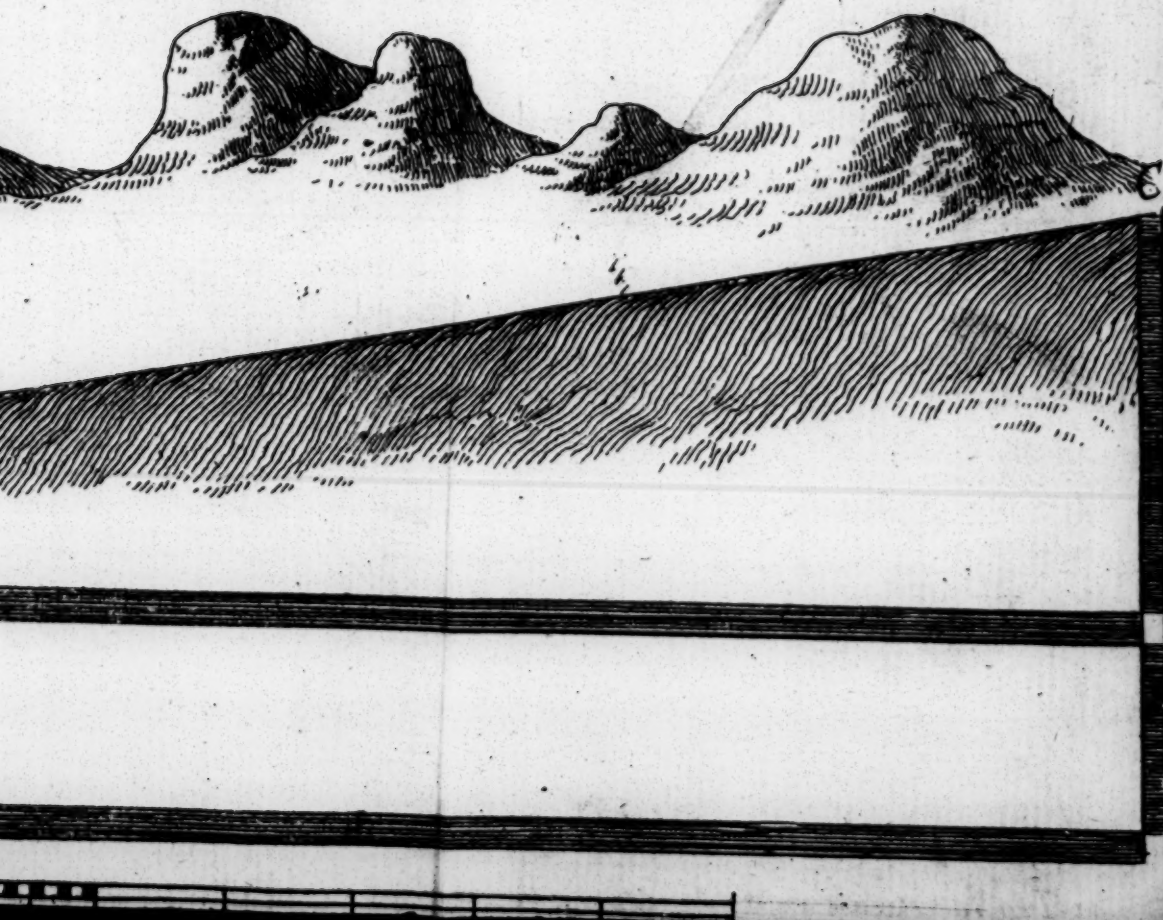


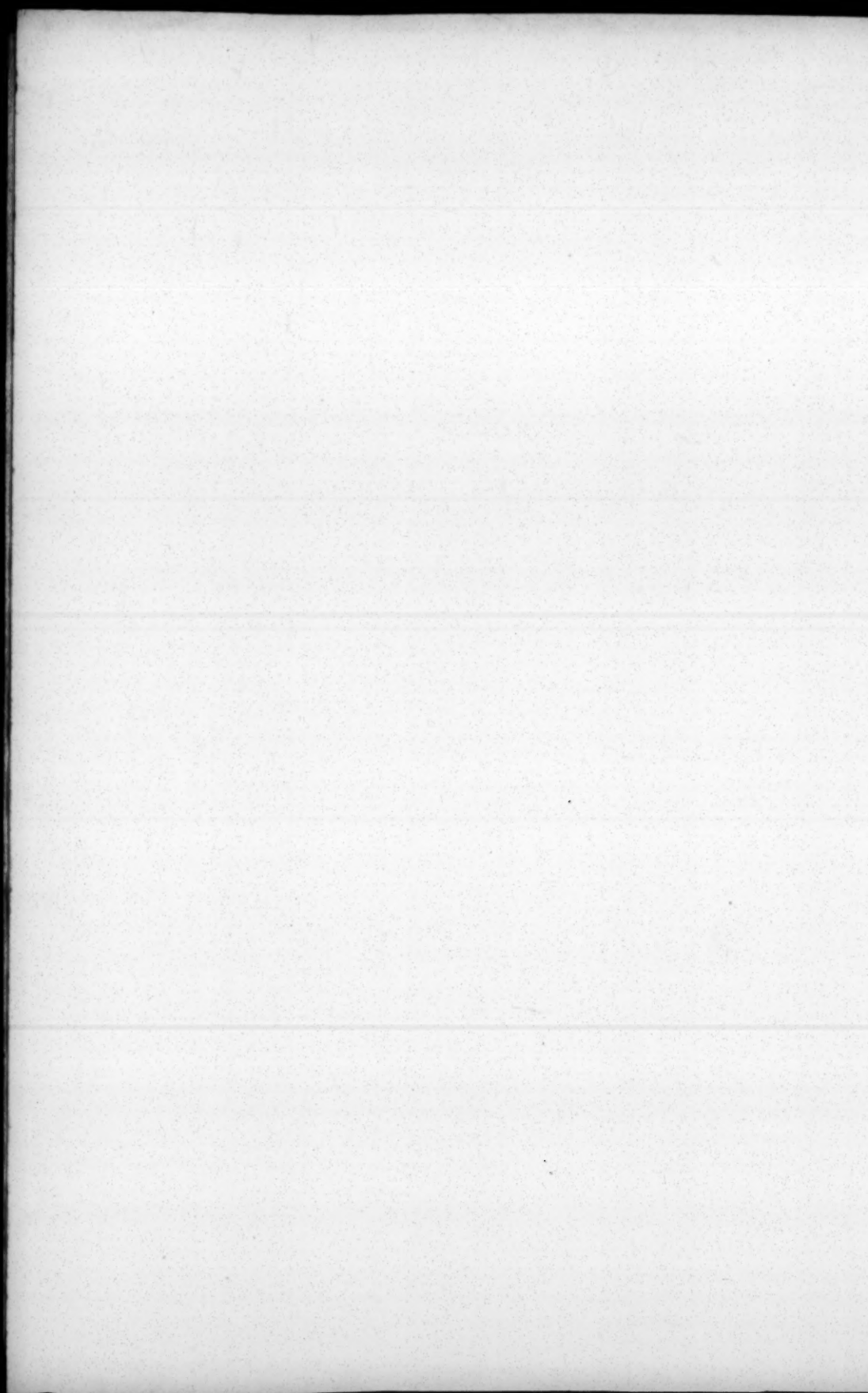
A Scale of Yards 40 in an Inch



Mines of Pencragddy

5.







*A Description of the Map of the Lead Mines
of Yffimecan.*

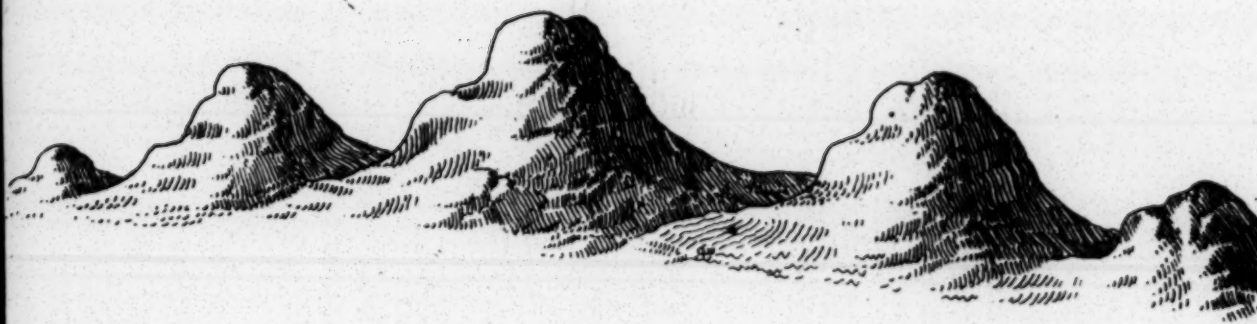
A THE Beginning of the Addit.
B Where it cuts into the Vein.
E The North Vein.

C Where we now are driving in the Sun
 Vein; and have already open'd Thirty Three
 Yards in Ore, all measures from a Foot to
 Two Foot wide; but the last Eight Yards at
C is above a Yard wide in good Ore, and
 grows wider as we drive Westward, and is
 there Eighteen Yards deep, and a fine feeding
 Ground to **D**; and there we have a Level of
 Fifty Yards deep, and a good feeding Ground
 for above Eight Hundred Yards more, being all
 Bog, and Watery Grounds, where Five Veins
 run, and never fail of being rich in Ore;
 which is all guarded or inclosed in a Blue
 Raggfill.

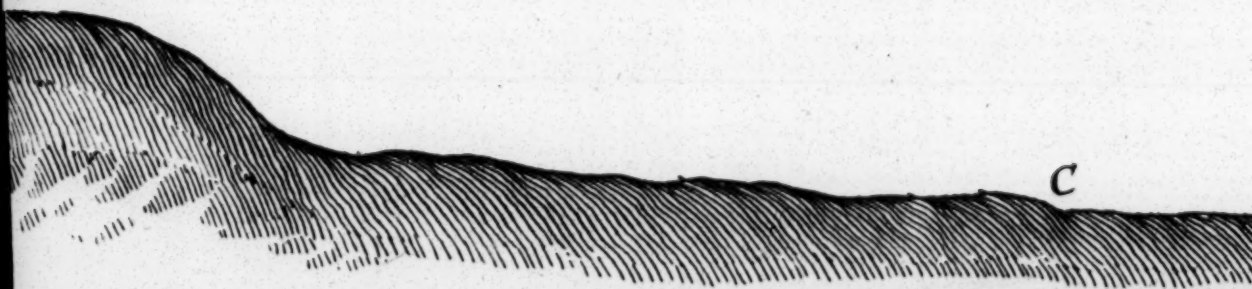
Note, That **E** the Line of Level to this
 Map.

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A Mapp of y^e Lead Mines of Ystimte



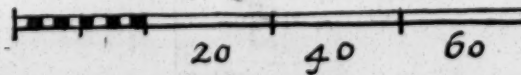
D



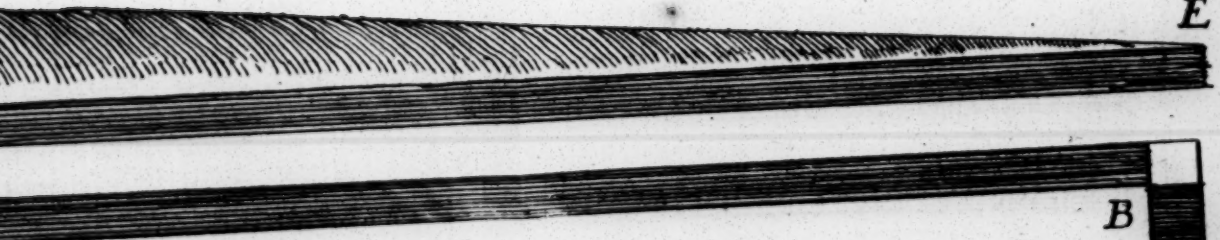
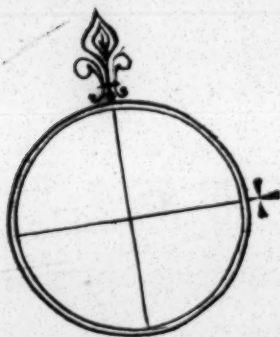
C

C

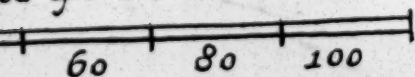
A Scale of Yards 40 i



ntean.

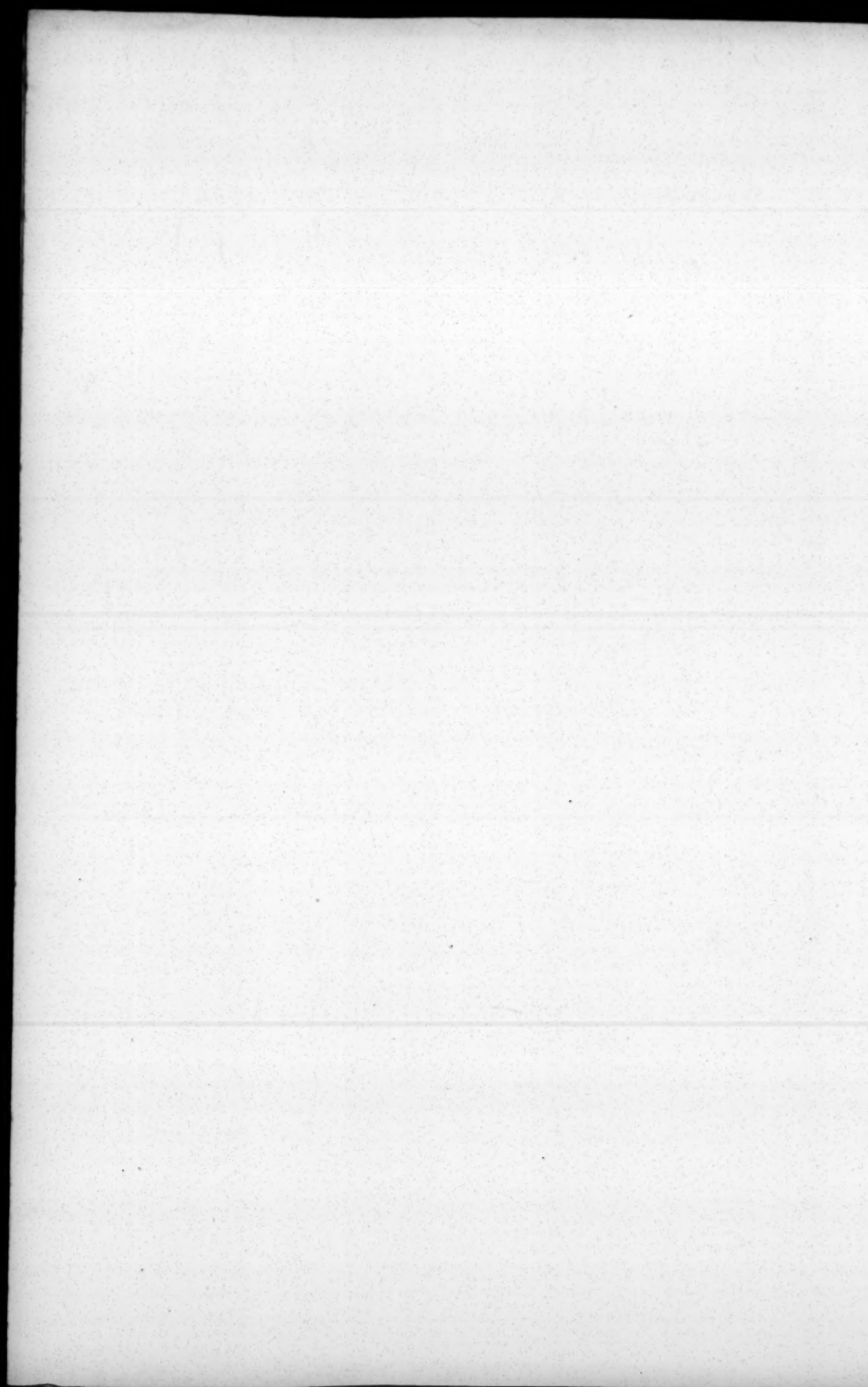


As 40 in an Inch



B

A



The description of the Map of the great Lake
of Geneva in Switzerland.

The Lake of Geneva, or the Beginning of
the Rhodan, being sixty Eight Yards deep.
The Lake of Geneva is all in the shape of an oval,
from four Yards broad to seven Yards, and
from four Yards long to thirty Yards, and the
four Yards high to seven Yards; and lies in a
flat manner one upon another as A, B, C, D and
twice forward, so that you have sometimes
half of one six or seven Yards wide, and some-
times nothing but a ladder of one inch thick
to show for the four Yards, both in looking at
driving.

The half of one Yards five Yards wide between
the sides all mixed for that breadth with Or
and clean Ribs of Ore in it, some of six inch
some twelve, some fifteen, and some twenty
inches wide.

O is the stamping mill to dress that Ore that
mixed with Stone.

A, B, C, D is the Town that we have built for
miners.

A, B, C, D is stone houses.
A, B, C, D is a small house.
There we have a large Liberty of above two
hundred Acres, which contains several more Vol
but I have not here described them, till it is thou
ght to try them, excepting one called the
Work, and the above three hundred Yards to
the Work.

*The Description of the Map of the great Lead
Mines of Cwmustwith.*

A THE Line of Level, or the Beginning of the Addit, being Sixty Eight Yards deep.

Note, This Vein runs all in Bellies of Ore of all Sizes, from Four Yards broad to Seven Yards, and from Ten Yards long to Thirty Yards, and from Four Yards high to Seven Yards; and lies in the same Manner one upon another as *B, C, D* and *E* Twitch forward; so that you have sometimes a Belly of Ore Six or Seven Yards wide, and sometimes nothing but a Leader of one Inch thick to follow for Five or Ten Yards, both in sinking and driving.

F The hard Ore Vein Five Yards wide between firm Sides all mixed for that Breadth with Ore; and clean Ribs of Ore in it, some of Six Inches, some Twelve, some Eighteen, and some Twenty Inches wide.

G Is the Stamping-Mill to dress that Ore that is mixed with Stone.

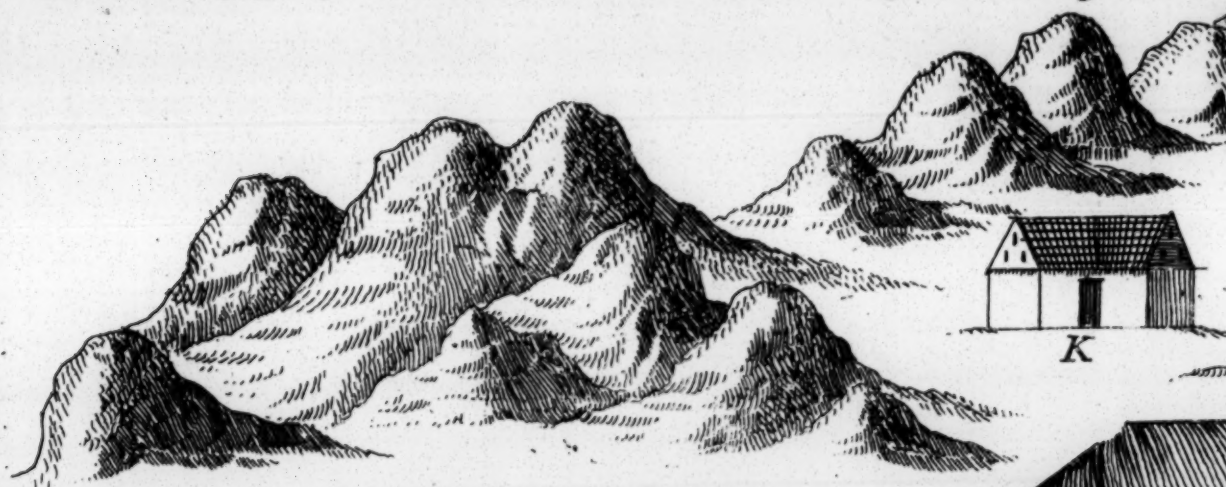
H, H, H Is the Town that we have built for our Miners.

I, K, L Is Store-houses.

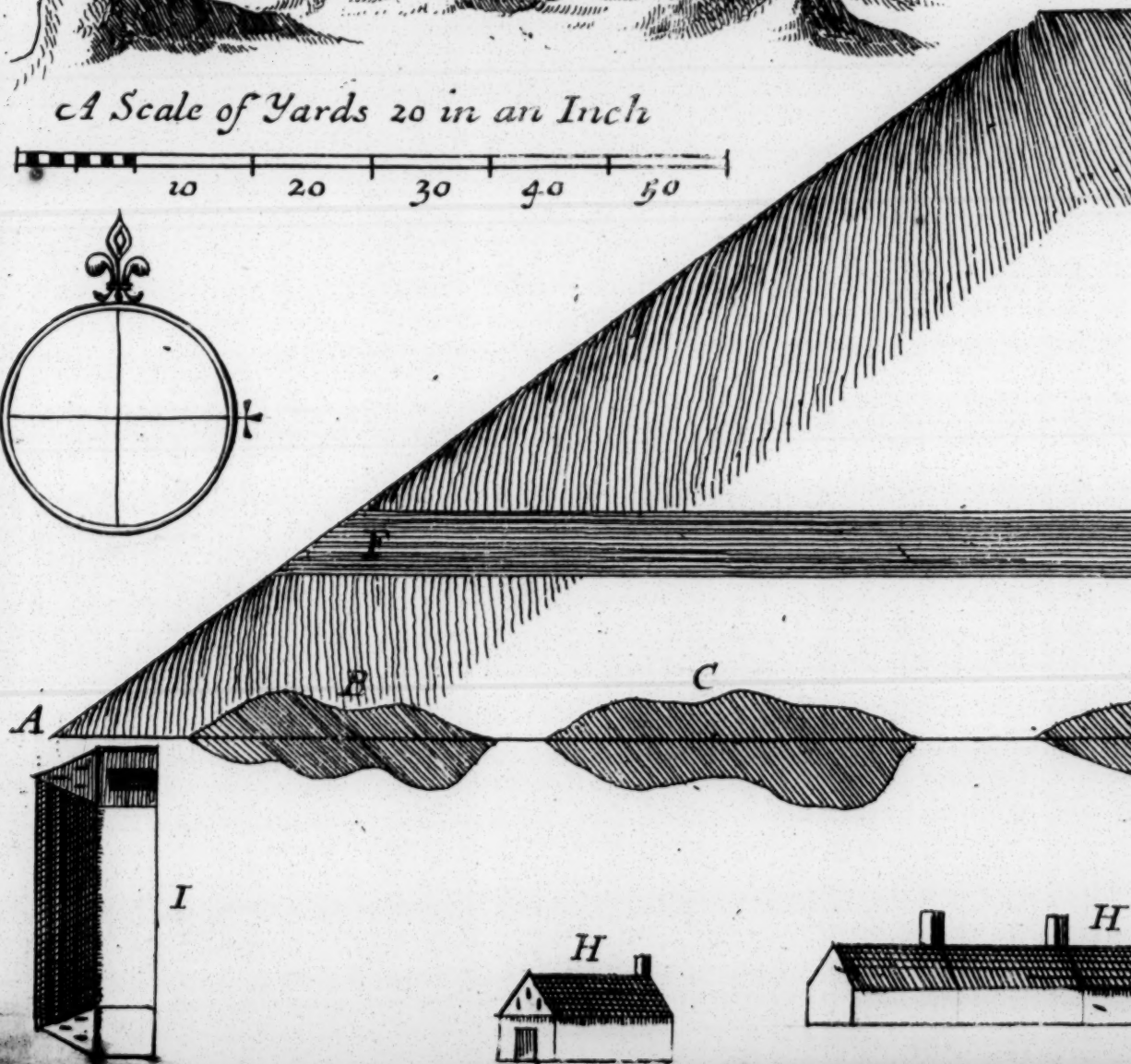
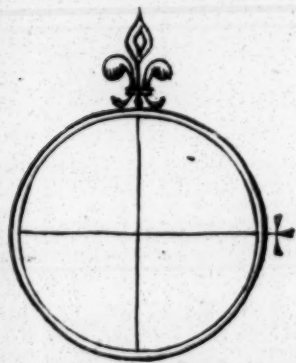
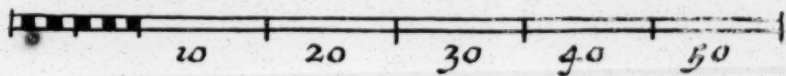
M Is a Smiths Forge.

Here we have a large Liberty of above Twenty Miles Compass, which contains several more Veins; but I have not here described them, till it is thought fit to try them, excepting One called the New Work, and lies about Three Hundred Yards from this Work.

A Mapp of Great Lead Mines of Cwmystwith

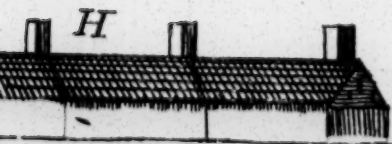
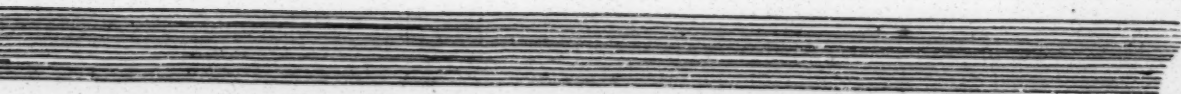
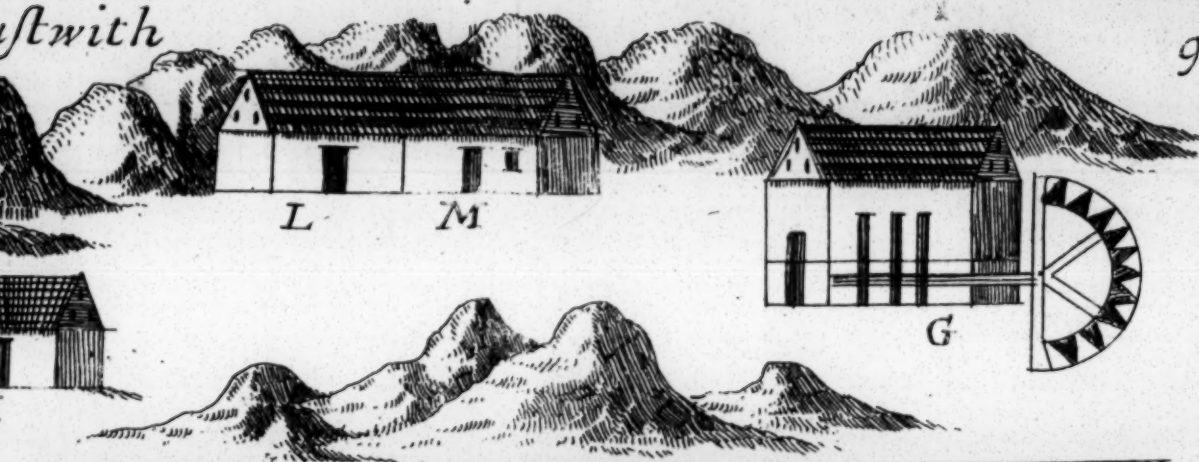


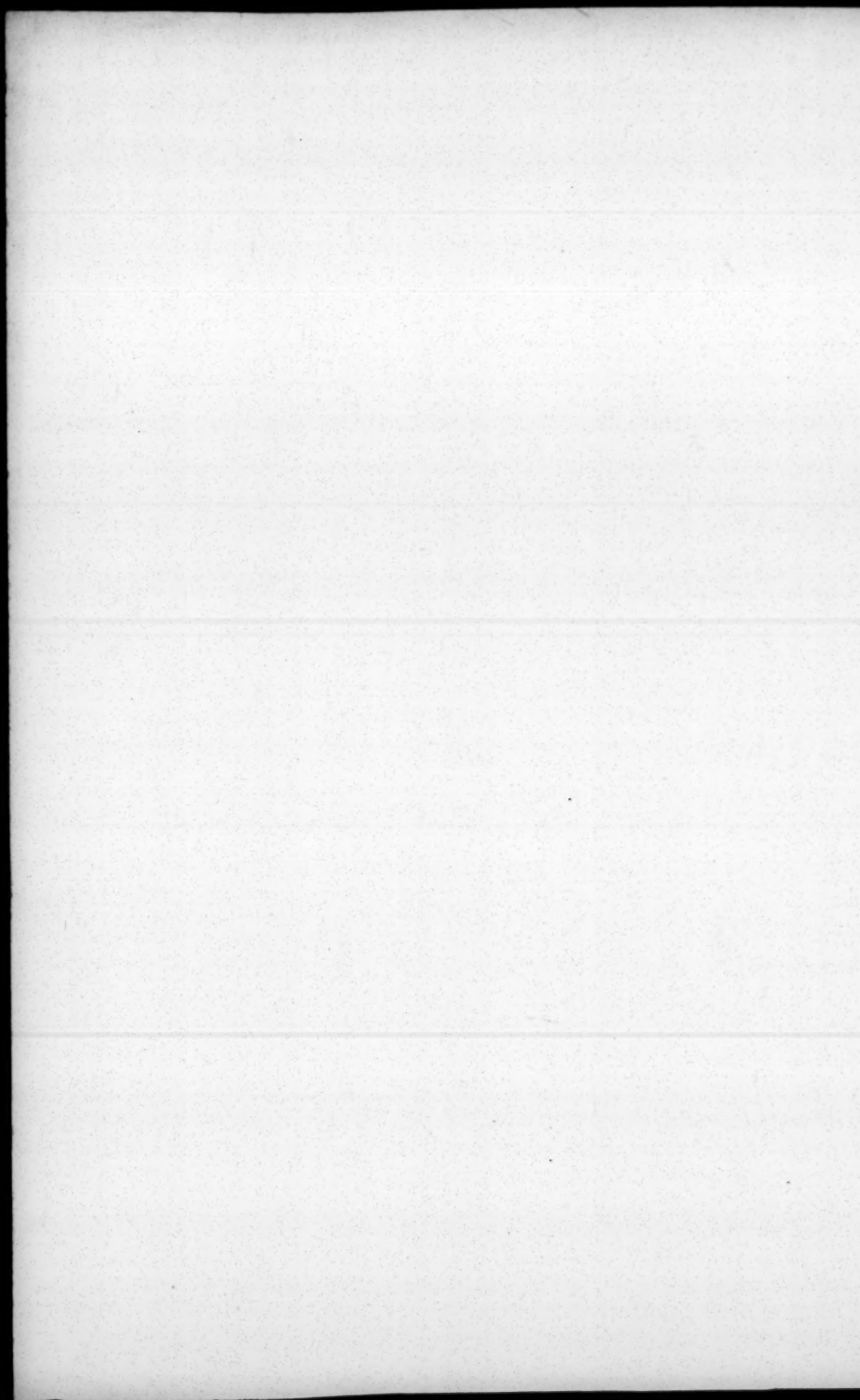
A Scale of Yards 20 in an Inch



stwith


9.





The Description of the New Lead Mines at

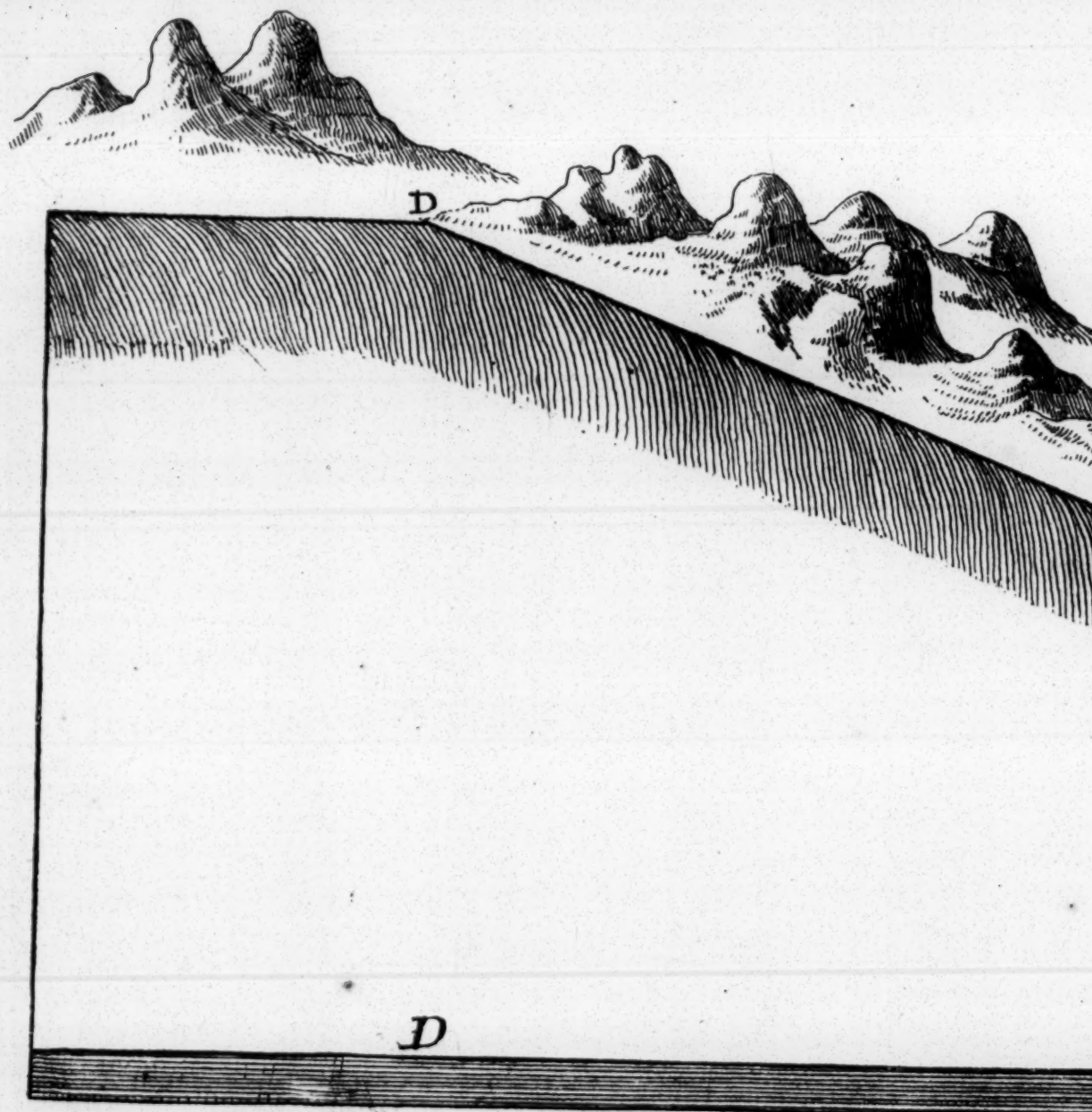
Cwmustwith.

**A**THE Line of Level and Beginning of the Addit. We are driven to B, being Thirty Yards, and Twenty Four of these in Ore, all measures from Nine Inches to Fifteen: This is a wide Clay Vein. We have not yet the Sun Side, tho' we have cut above Two Yards wide for it; and the Clay is all that Breadth mixed with Ore.

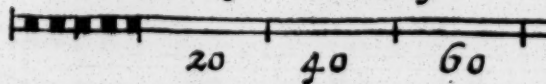
At C we shall come into the firm Part of the Hill, where I hope to have all this Clay in Ore.

At D we come to the firm Strake of the Hill, and our Addit will be One Hundred and Fifty Four Yards deep, and continues a Strake for near One Mile in Length.

A Mapp of y^e New Lead Mines at

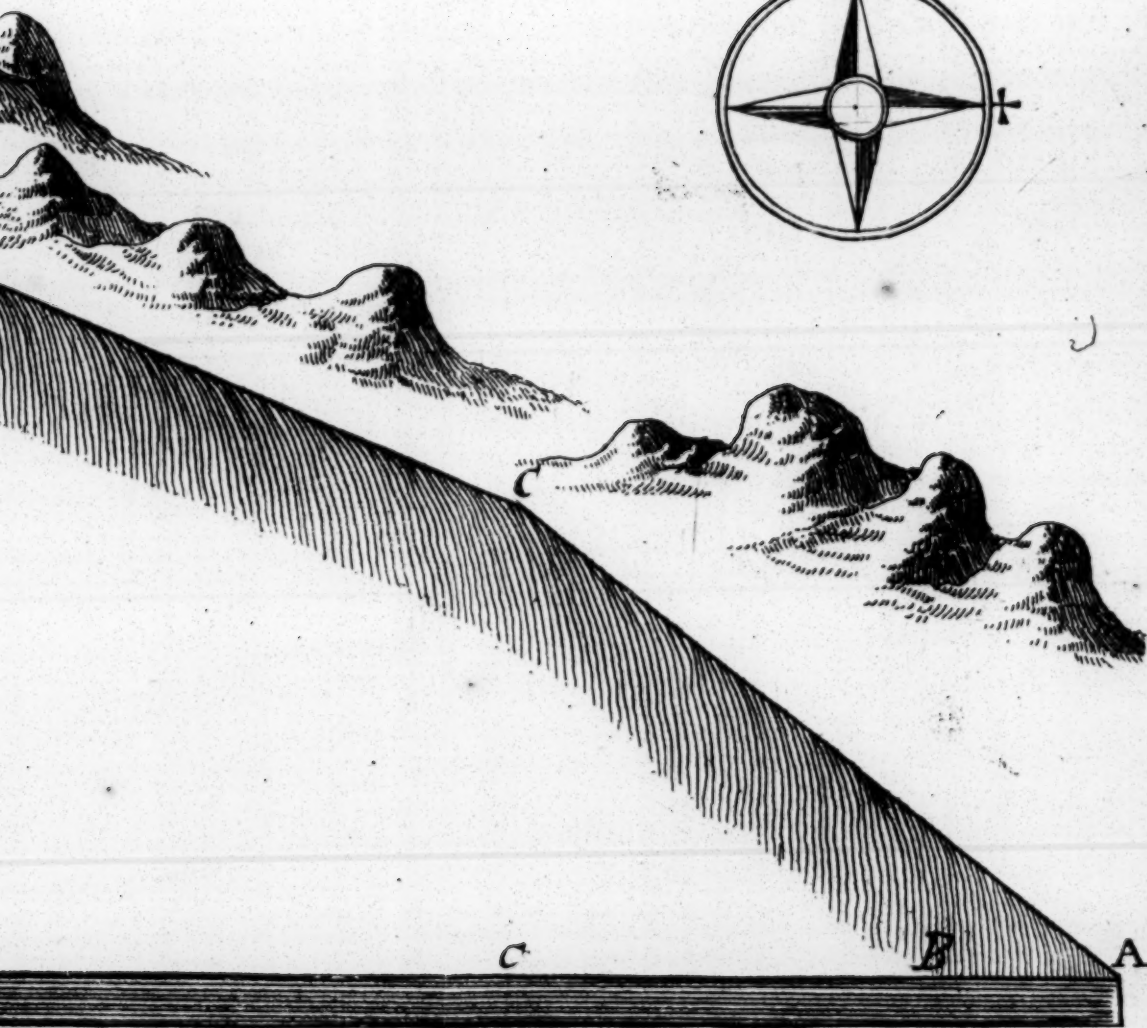
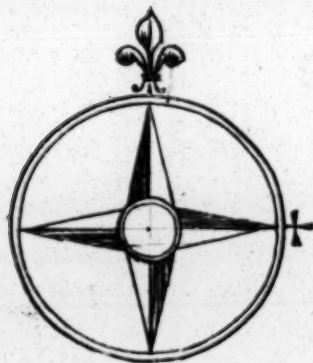


A Scale of Yards 40 in

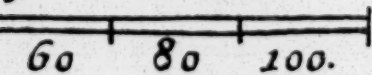


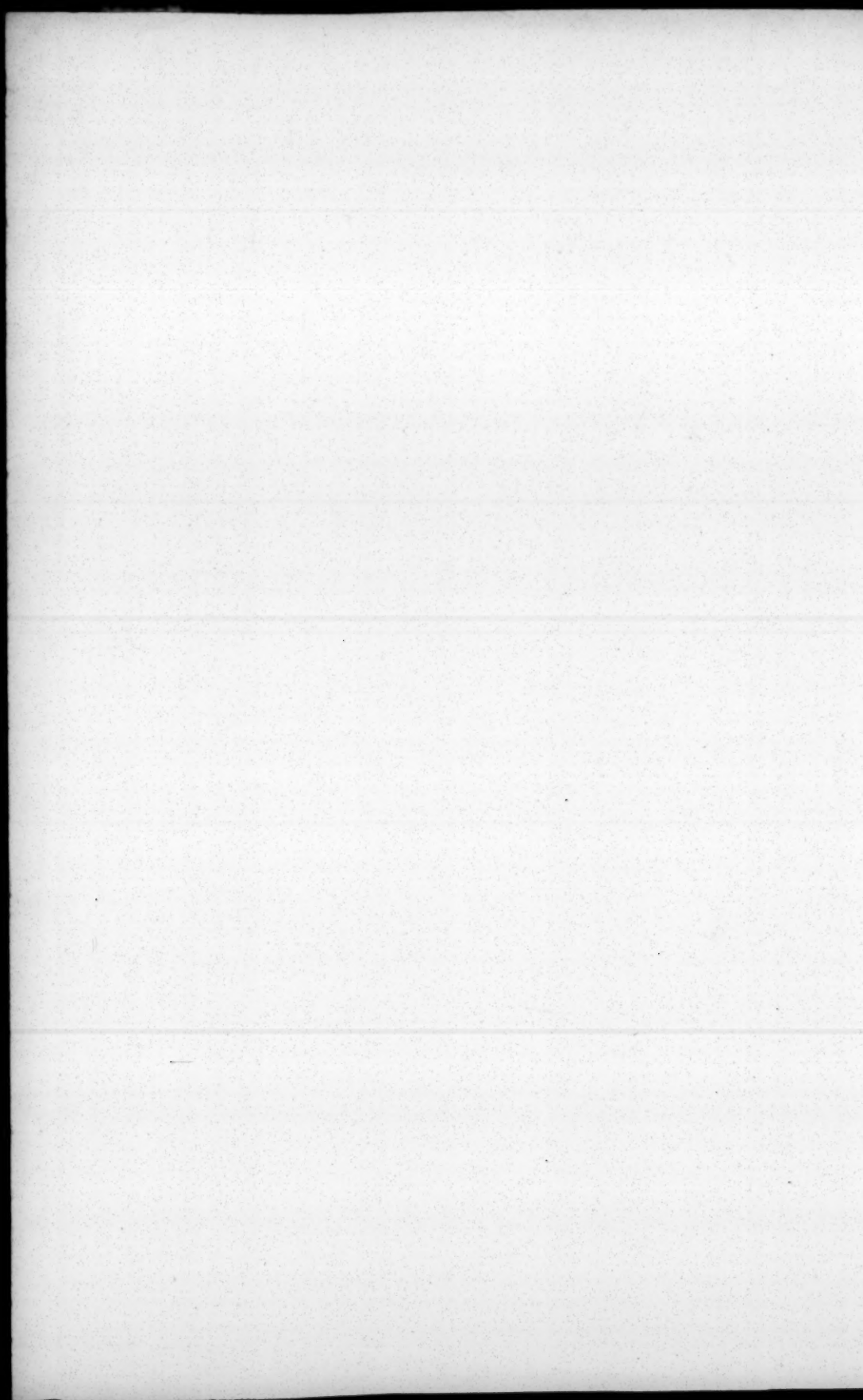
s at Cumustwith.

17.



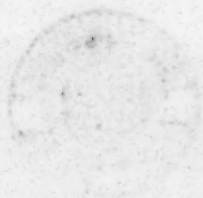
40 in an Inch






Mr. M.B. I am in order to mention the fact
 of my first place, either in the
 and Map of the Country, or in the
 particular Map of the Mines, you
 with a Pair of Compasses take the
 recorded Distance of the Two Places
 between their Points, which Distance
 you find upon the scale of Miles
 the general Map, or find for the
 particular Map, gives you the Distance
 the Place is Miles or Yards.

Therefore I would know the Distance
 from Belknap to the Silver Mills.
 the general Map, I see the one is
 of the Compasses at Belknap, and
 then I see the Distance is 10 Miles
 of which I see the Distance is 10 Miles
 from the general Map, I see the one is
 of the Compasses at Belknap, and
 then I see the Distance is 10 Miles
 of which I see the Distance is 10 Miles



 N.B. *That in order to measure the Distance of any Two Places, either in the general Map of the Country, or in the particular Maps of the Mines, you must with a Pair of Compasses take the extended Distance of the Two Places between their Points, which Distance being laid upon the Scale of Miles for the general Map, or Yards for the particular Maps, gives you the Distance of the Places in Miles or Yards.*

EXAMPLE.

Suppose I would know the Distance from Eskirhir to the Silver Mills, in the general Map, I fix the one Point of the Compasses at Eskirhir, and extend t^o other Point to the Silver Mills, which Distance being laid on the Scale of Miles, reaches Three Miles and something above Half a Mile; and so of the Rest.



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